

Nickel Steel

THE ACME OF
SCIENTIFIC EXPERIMENT

Has proved to be a Perfect Success

For Marine Engine forgings and Shafting

The shafts of the peerless "OREGON" } Were "Bethlehem"
The shafts of the fleet "FARRAGUT" } Forgings

Send for Pamphlet on Marine Engine Forgings

THE BETHLEHEM IRON COMPANY

SOUTH BETHLEHEM, PA.

BRANCH OFFICES

100 Broadway, New York. 421 Chestnut St., Philadelphia.
1433 Marquette Building, Chicago.



The U. S. Revenue Cutter "Verbena"

Is among the list of boats fitted with our
Mast-Head and Side-Lights.

RUSSELL & WATSON, 145 Main St., Buffalo, N. Y.

Sold by H. D. EDWARDS & CO., UPSON WALTON CO., G. B. CARPENTER & CO.

Standard Pipe Covering Co.,

KING OF ALL FIRE PROOFING. ASBESTOS AIR-CELL.



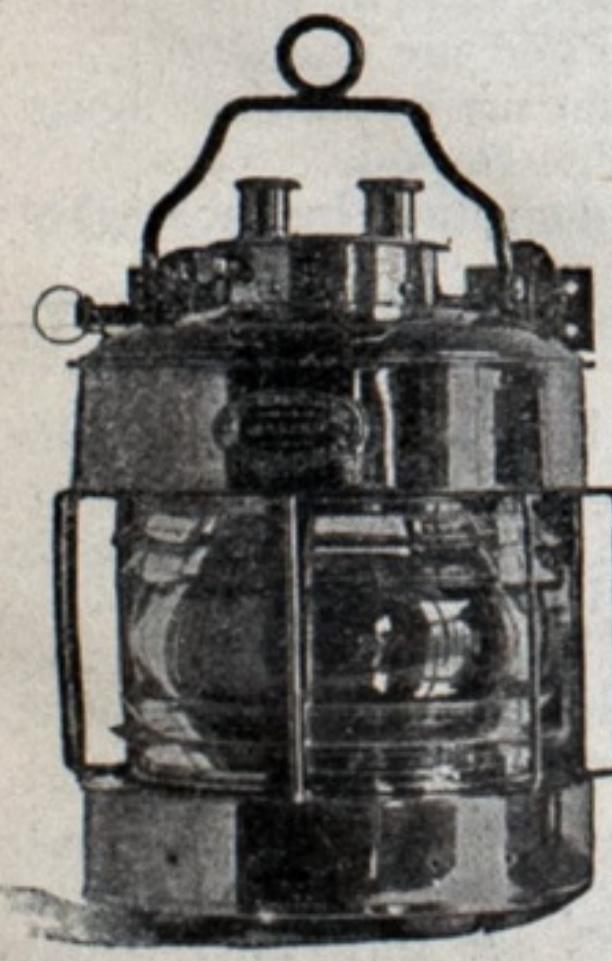
My name is Asbestos Air-Cell.
The vibration of boilers and pipes or heat and fire will not destroy me.
The largest pipe and boiler covering that can be made is made out of Asbestos Air-Cell, for there is no breakage. It is also a great Insulator for Bulk-Heads and Cabins. Only Genuine Asbestos Air-Cell is made of three layers of paper cemented together.

SEND FOR PRICE LIST AND SAMPLES.

20-22 MICHIGAN ST.,

CLEVELAND, O.

TELEPHONE, MAIN 62.



Oil and Electric Signals, Fixtures and Lamps

for Steamships, Yachts and U. S. Navy Vessels.

FOR POWER, EFFICIENCY and
STRENGTH, USE THE :::::::::::::
FRESNEL GLASS SIGNALS—
the only correct glass for marine work.
Adopted as such by the nations of the world.

WM. PORTER'S SONS, Manufacturers,
271 PEARL ST., NEW YORK CITY.

STANDARD

AUTOMATIC RELEASING DEVICE.

The falls are so rove that both ends of the boat detach irrespective of which end strikes the water first.

Will Release a Boat Immediately

in the roughest sea or under speed, and can be hooked on without delay or injury to the hands of the men hooking it on.

STANDARD AUTOMATIC RELEASING HOOK CO.,

22 and 24 State Street, New York.

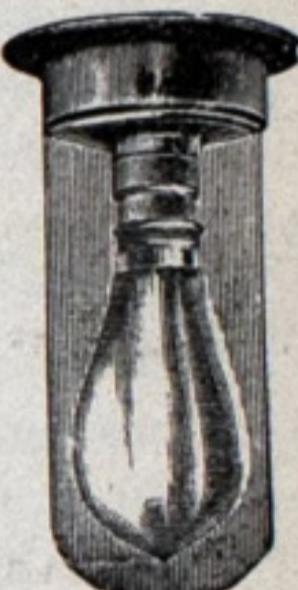


Ship Lamps..

Oil and Electric Fixtures
For Steamships, Yachts, Etc.



Great variety of designs.
All sizes and prices.



Prices and Cuts on application.

PAGE BROS. & CO.

347 to 357 Cambridge St.

BOSTON, MASS.

B. F. SEIDLER.

F. J. MINER

Detroit Electric Wiring and Repair Co.,

82 and 84 GRISWOLD ST., DETROIT, MICH.

Electric Lighting of Ships

RECONSTRUCTED AND MADE
SAFE, SUBSTANTIAL, EFFICIENT,
At the Least Possible Cost,
Assuring Highest Class
In Accordance with the Rules of the
American Registers of Shipping.
Inland Lloyds Classification.
Marine Rules of National Electrical Code.

General Electrical Contractors.

DEALERS IN SUPPLIES.
MANUFACTURERS OF SPECIAL
WATER-TIGHT AND
MARINE ELECTRICAL APPLIANCES.

Our Installations are represented on Steam
Vessels on the Lakes, Ocean, Coast
and Mississippi River.

Specifications, Estimates, Information Furnished.
Correspondence Solicited with Owners and Builders of Steam Vessels of all Descriptions.

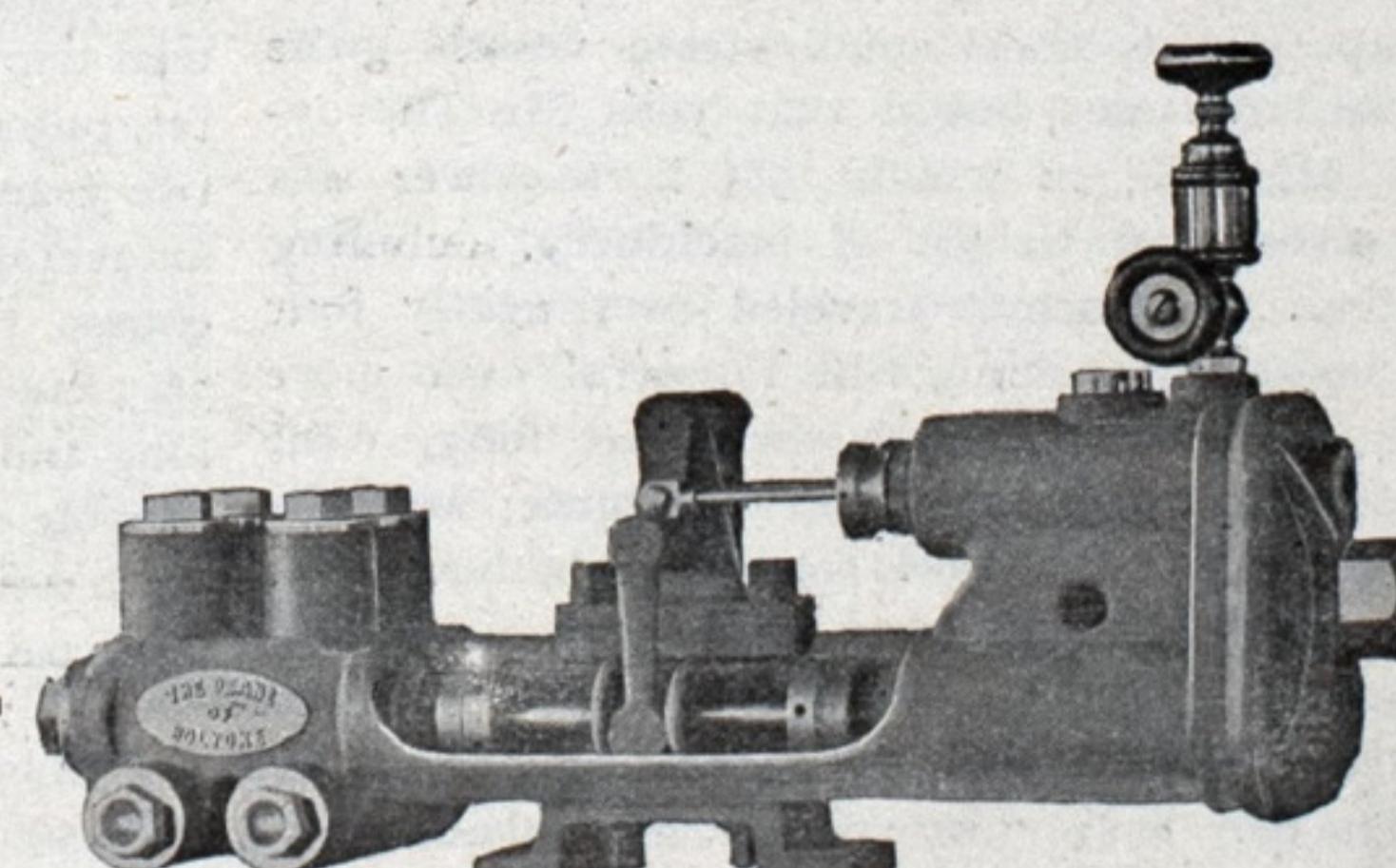
The Deane of Holyoke Marine Pumps.

Fire Pumps,

Boiler

Feed

Pumps.



Surface
Condensers,
Air and
Circulating
Pumps.

FIG. 607. SIZE 2 X 1 1/8 X 2 3/4. DUPLEX.

The Deane Steam Pump Co.,

HOLYOKE, MASS.



Storage Docks for Anthracite:
Kingsbury Street, between Indiana and Erie Streets.
Elston Avenue Division Street Bridge (North Branch).
North Avenue Bridge.
Division Street Bridge (Ogden Canal).
South Halsted Street Bridge.

GEO. F. LYNN,
Marine Salesman.

The Roberts Safety Water Cube Boiler

Entirely constructed of special material. Workmanship strictly first-class. Fifteen years a success. Built in duplicate, all parts interchangeable. Greatest efficiency in cubical space occupied. Absolutely safe from disastrous explosion. No serious accident has ever occurred.

NEARLY ONE THOUSAND BOILERS SOLD TO DATE.

We refer to all our customers. They all speak highly of

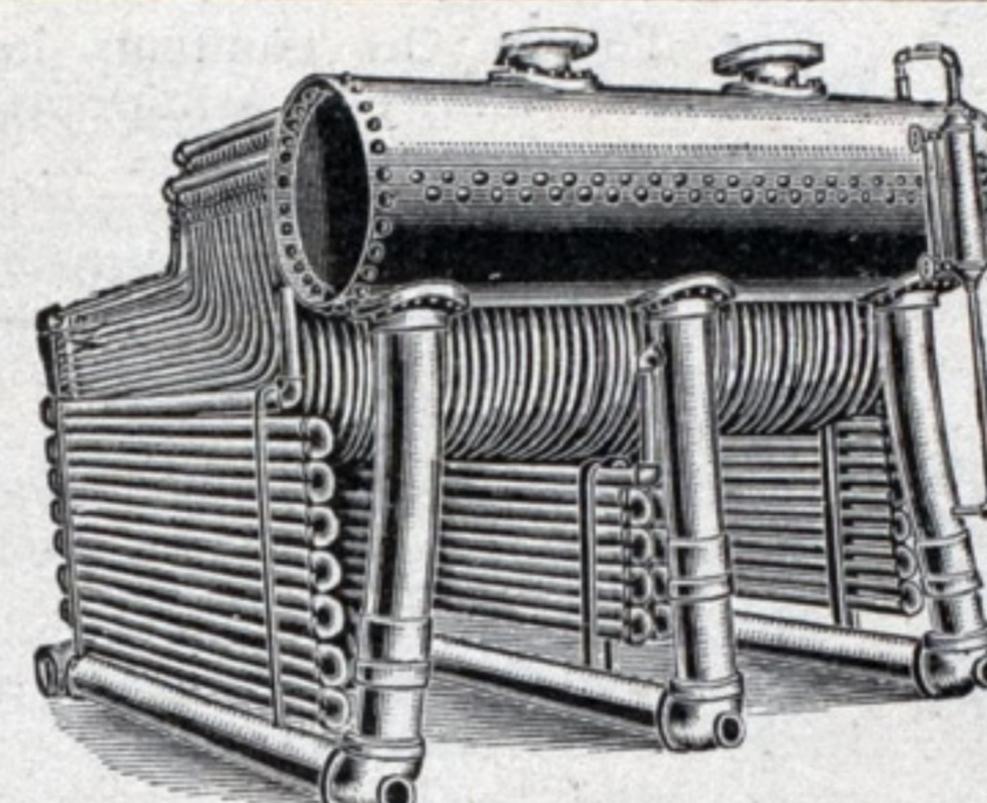
THE ROBERTS BOILER.

Original testimonial letters can be seen at our office. All customers' addresses will be furnished upon application. Investigation invited. Roberts Boilers are in use everywhere. Correspondence solicited.

Write for handsome illustrated circulars to

THE ROBERTS SAFETY WATER TUBE BOILER CO.,
Works, RED BANK, N. J. 39 and 41 Cortlandt St., NEW YORK CITY.

The largest works in the United States manufacturing Marine Water Tube Boilers Exclusively.



PERSPECTIVE VIEW of the 250 H.P. Boiler built for the Steam Freighter "Clara," having 6 feet face and 8 feet length; 34.4 square feet of grate area and 1900 square feet heating surface; weight of boiler and water, 14,000 lbs. This has replaced a Return Tubular Boiler, thereby saving, in deadweight of boiler and water, 16½ tons. The "Clara" now has 14 inches less draft and an increased earning capacity of \$10.00 per day. We claim for the Boyer Sectional Water Tube Boilers, that they are of an entire new design, are simplest in construction, are accessible to all parts, are rapid steamers with short circulation, have low center of gravity, have no joints in the fire, have no dead ends, occupy less space in width, length and height than any other, are easily fired, can be repaired or set up by any ordinary mechanic, do not require a brick casing and are shipped whole or knocked down into packages for transportation by man or beast.

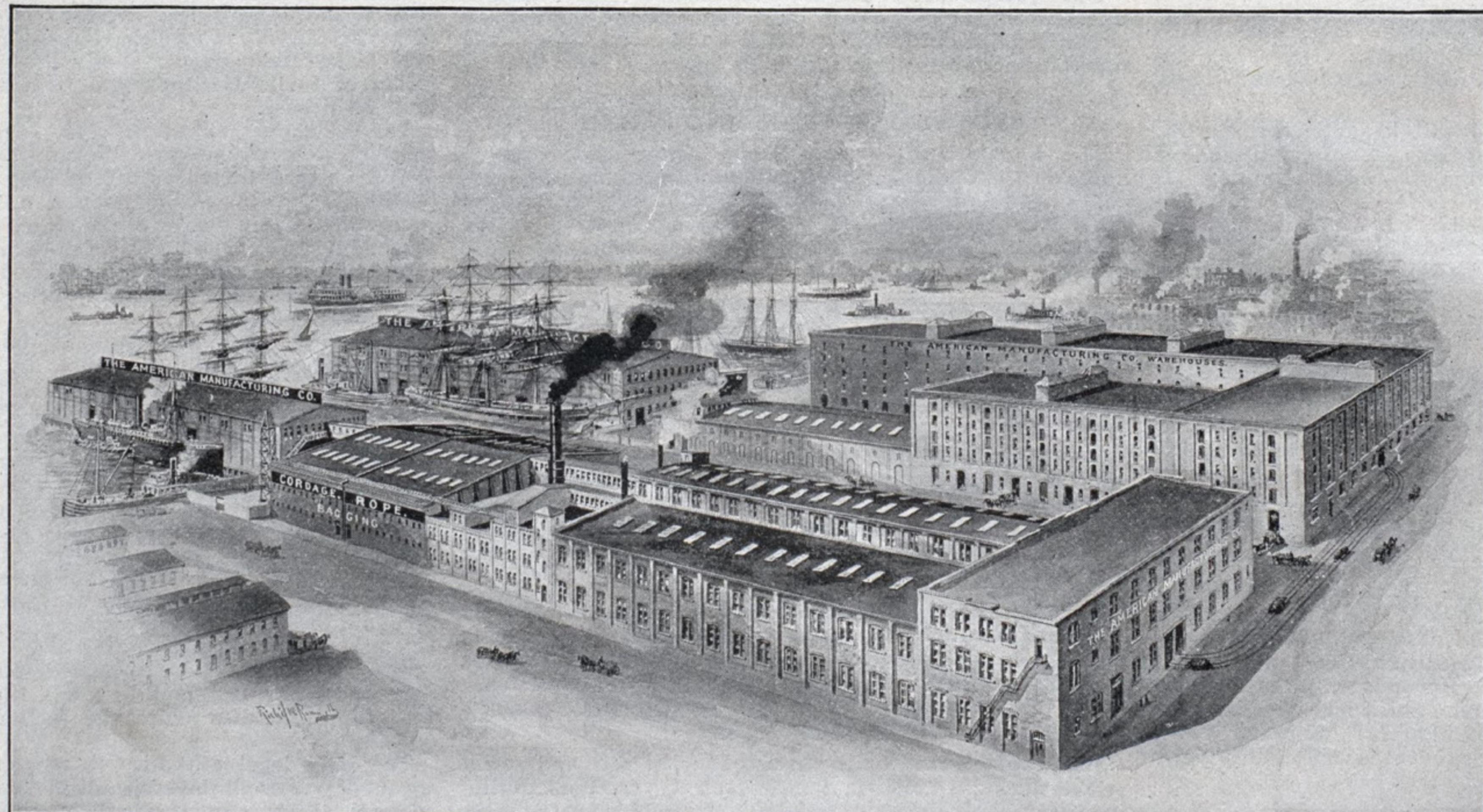
LANSON BOYER'S SONS, 92 Wall St., New York, N. Y.

A....
SPECIALTY.

AND.....

EXTRA LARGE HONG HOWING HAWES

THE AMERICAN MANUFACTURING CO.'S "BROOKLYN MILLS."



THE AMERICAN MANUFACTURING CO.

MAIN OFFICE, 67 WALL STREET, NEW YORK.

MANUFACTURERS
OF

CORDAGE.

Ship's Hawser. Canal Lines. Bolt Rope.
Net Rope. Lath Twine. Binder Twine.

Four Strand
Plumbago Heart Hoisting Rope.

Oil Well Cordage.
Drilling Cables and Sand Lines.
Any Length Unspliced.

All Sisal and Manila
Specialties.

Send for our
"Little Blue Book on
Rope Transmissions."

M
A
N
H
I
A
T
R
A
N
S
M
U
S
H
O
Z
R
O
H
E
S
—

Send for our
"Little Blue Book on
Rope Transmissions."

MARINE RECORD

ESTABLISHED 1878.

VOL. XXII, No. 7.

CLEVELAND---FEBRUARY 16, 1899---CHICAGO.

\$2.00 Per Year. 5c. Single Copy.

FUEL FOR STEAMERS.

Four thousand men are now engaged in making Gibraltar one of the greatest coaling stations and depots for the refitting of warships in the world. It will take two or three years yet to carry out the plans for extending the docks and other accommodations required for the repairing of naval vessels and to secure perfect protection from outward attack for the vast quantity of coal that is always kept in stock at that great station. All the improvements are to cost about \$15,000,000.

We hear most of all nowadays about the coaling stations that are needed for navies. They are, of course, equally essential for the merchant marine. Three-fourths of the world's commerce is carried on steamships, and the whole of the power used by all nations for the defense of commerce depends upon the use of coal. Without security on the seas there can be no security of commerce, and so there must be geographical continuity of coaling stations all around the world. This fact greatly impressed Great Britain, for it touches her very existence. Look at her line of government coaling stations all along the great trade routes.

Along the route to the Orient: Gibraltar, Malta, Aden, Bombay, Trincomalee, Singapore, Hong Kong. Along the East Atlantic route: Sierra Leone, Ascension, St. Helena, Cape Town, Mauritius. In Australia waters; Australian and New Zealand ports. Along the West Atlantic route: Halifax, Quebec, Bermuda, St. Lucia, Kingston and Falkland Islands; and in the Northeast Pacific, Esquimalt. After that, deposits of coal on the east and west coasts of Canada, South Africa, India and Australasia. For a nation whose commerce is all around the world, little more could be done to make geographical unity complete.

In time of peace coal can be bought by any naval vessel and the merchant marine in most of the ports of the world, but not in all of them. Coal is kept as a commodity at 231 ports of the world outside of Europe, where every port is a coal depot, and dealers, of course, are glad to have buyers of considerable quantities like the captains of steamships, come along. At little islands like Nossi Be and Comoro, in the Indian ocean, and Samoa and the Fiji islands, in the Pacific, merchants keep a good supply of coal on hand, and practically their only customers in these tropical regions are passing vessels. At these out-of-the-way places ship captains buy only a sufficient quantity to carry them to a port where coal is a more generally used commodity, for dealers, where there is little or no competition in the article, often charge an exorbitant price for it.

Coal is now sold at such low figures in our own ports that most steamers in the trans-Atlantic trade usually coal on this side of the ocean for the round trip. It happens, therefore, sometimes when they are coming back to America and are greatly delayed on the way their supply runs short, and we hear now and then that they have been compelled to put into Halifax for coal. Except in the Pacific supplies of coal are now scattered so widely over the world that usually a vessel requires only a few days' slow sailing or steaming to reach some port where it may replenish its bunkers. Suppose, for instance, that one of our steam whalers in the Arctic, after a season north of Behring Straits, should run short of coal, it has only to go south as far as Unalaska, in the Aleutian archipelago, to buy all it needs.

Outside of Europe coal is specially kept for sale to steamers at eight ports on the north coast of Africa; at thirteen ports of West Africa, including the Cape Verde Islands and the Canaries; at fourteen ports along the gulf of Mexico and the Caribbean sea; at twenty-four ports of the West Indies; at twenty-two Atlantic ports of North America as far south as

the gulf of Mexico; at five islands of the Atlantic; at nine ports of East Africa; at eighteen ports of South Asia; at six islands of the Indian ocean; at twenty-six ports of the East Indies and Philippines; at fourteen ports of the East Asia coast; at five ports of Japan, Sachalin and Kamptchatka; at ten ports of Australia; at seven ports of New Zealand; at nineteen ports on the west of North America; at ten ports on the west of South America; at Honolulu and Hilo in the North Pacific, and at four islands in the South Pacific.

TREASURY DECISIONS.

DOCUMENTING OF VESSELS.

Vessels can not be documented in the United States unless owned by citizens of the United States.

TREASURY DEPARTMENT,
BUREAU OF NAVIGATION,
WASHINGTON, D. C., Feb. 2, 1899.

SIR: Referring to your letter dated the 31st ultimo, this office has to state that in order to the documenting of a vessel of the United States her purchaser must be a citizen, either by birth or completed naturalization. Respectfully yours,

EUGENE T. CHAMBERLAIN,
Commissioner.

Collector of Customs, Newport, R. I.

REGISTRY OF VESSELS.

Foreign vessels cannot be registered in the United States.

TREASURY DEPARTMENT,
BUREAU OF NAVIGATION,
WASHINGTON, D. C., Feb. 3, 1899.

SIR: Referring to your letter dated the 2nd instant, this office has to state that a United States register can not be obtained for the Canadian steamer you mention except under special legislation by Congress.

As regards your statement that you understand that foreign registered vessels, when owned by American citizens, have all rights except that of the coasting trade, you are informed that your understanding is erroneous, there being no provision of law to such effect. Respectfully yours,

EUGENE T. CHAMBERLAIN,
Commissioner.

MR. J. G. SCHWENDLER, Rochester, N. Y.

FEES FOR ADMEASUREMENT OF YACHTS.

Fees for admeasurement of yachts are limited by act of March 3, 1883.

TREASURY DEPARTMENT, Feb. 5, 1899.

SIR: This department is in receipt of your letter, dated the 1st instant, inquiring what fees are allowed for admeasuring spaces to be deducted from gross tonnage in order that the net tonnage of yachts may be ascertained.

The act of August 5, 1882, authorized the Secretary of the Treasury to establish and promulgate the proper scale of fees to be paid for the readmeasurement of the spaces to be deducted from the gross tonnage of a vessel, "on the basis of the last sentence of section 4186 of the Revised Statutes, beginning with the words, 'But the charge of the measurement.'"

Certain fees were so established and promulgated by the department's circular of April 5, 1895, but it is held by the department that they do not apply to the readmeasurement of deducted spaces in the case of vessels documented as yachts of the United States, for the reason that an act approved March 3, 1883, provided that "all charges for license and inspection fees for any pleasure vessel or yacht shall not exceed five dollars, and for admeasurement shall not exceed ten cents per ton."

As bearing upon the matter, your attention is invited to the first section of the act of June 19, 1886, and to the regulations of 1892, relating to fees. Respectfully yours,

O. L. SPAULDING, Assist. Sec'y.
Collector of Customs, New Haven, Conn.

THE OCEANIC AND THE GREAT EASTERN.

Mr. N. Scott Russell writes as follows on the relative merits of the two great steamers: "Now that after forty years the Great Eastern has been surpassed in size, or, to speak more accurately, in displacement, by 1,000 tons, it may be interesting to draw attention to some points in the progress of engineering and shipbuilding that have been made in that period. At the time the Great Eastern was built steel only existed in the form of tools and other small pieces. Ships were built of iron plates with a tensile strength of 20 tons to the square inch, while now by the Bessemer and Siemens processes they can be built of steel plates having a tensile strength 50 per cent. greater, and can be bought at the same price as the iron plates of forty years ago. Theoretically, then, a ship should be built with two-thirds of the material used formerly. This, however, is only partially true, as the difference in resistance to compression of iron and steel is not so great as it is in tension, and an allowance has to be made for corrosion. As a matter of fact, I believe there is as much material in the Oceanic as in the Great Eastern, and the former should, therefore, be enormously strong. It is in engines, however, that the most remarkable progress has been made. Forty years ago marine engines weighed 5 cwt. per actual horse-power, and now the same power is obtained from 2 cwt. With high-pressure (it was formerly 25 lbs., and is now nearly 200 lbs.) and triple-expansion engines the coal consumption is only one-third what it was, so that for the same weight an engine yields 2½ times the power for less fuel. With modern engines of nearly the same weight the Great Eastern could have been driven 20 knots an hour with the same consumption of fuel. Considering the mechanical difficulties to be contended against, it is marvelous to think that a vessel four or five times as big as any then built, combining a number of new principles of construction, since generally adopted, was constructed nearly half a century ago, and that she never showed the least sign of weakness, and was so beautifully modeled that she opposed as little resistance as any ship ever built. The Great Eastern made progress in the size of ships an easy matter, and will always reflect the highest credit on her designers, T. K. Brunel and J. Scott-Russell, as pioneers in naval architecture."

THE AMERICAN BUREAU OF SHIPPING.

At a recent meeting of the American Bureau of Shipping (the Record of American and Foreign Shipping) Mr. A. A. Raven was elected president to fill the vacancy made by the resignation of Mr. T. B. Bleecker. Mr. W. Irving Comes was elected secretary, vice Walter R. T. Jones, who takes Mr. Comes' place as vice president. The American Bureau of Shipping was organized in 1867 under the title of the American Shipmasters' Association. Mr. Raven is its third president, the late John D. Jones having succeeded Mr. Bleecker for a time. The Record was first issued in 1869, and since that time a more reliable record of classification of American and Foreign vessels has not been issued in any country. Mr. E. Platt Stratton, is the consulting engineer for this the only classification society of shipping under our flag. The officers are at 37 William street, New York.

THE Trans-Siberian Railway Co. has made a contract with Japanese lumber dealers to supply 800,000 ties yearly for the next 5 years, or 4,000,000 in all. The ties are to be delivered at one yen (50 cents) each and will be shipped from Hokkaido. "Wood and Iron" of San Francisco, expresses a belief that a considerable portion of the ties which will be utilized in railway construction in China during the next few years will be purchased in Japan.

NEWS AROUND THE LAKES.

CLEVELAND.

Special Correspondence to The Marine Record.

Superintendent S. I. Kimball, of the life saving service at Washington, is preparing to rush work on the new life saving station. U. S. Engineer Jared A. Smith, has notified him the station in use now must be vacated by July 1, to make room for the harbor improvements. The new station will probably be ready for occupancy by that time. It is expected it will be located about 50 feet west and 100 feet north of the present station.

Local shippers say that very little coal will be carried over and that the docks at upper lake ports will be pretty well cleaned up by the opening of navigation. Reports from the head of Lake Superior say that stocks of hard coal are already pretty low, estimated at 40,000 tons. A Cleveland shipper, a few days ago, said that it was estimated that 100,000 tons of coal were consumed by dock fires at Duluth and West Superior this winter. The general opinion is that rates to Portage and Lake Michigan ports will be higher than they have been for several years past, as a large number of coal carriers were wiped out during the season of 1898.

Owners of lumber carrying vessels are now in much better mood than they were at the close of last season. There is every indication that they will do a large amount of business this year at good rates. Some contracts have already been made at figures which are said to be even better than the vesselmen expected. "There will probably be no further effort made to form a lumber carriers' association this year," said a vessel owner this week. "In fact, there is now no need for such an organization. The shipper cannot control the situation, as he did last year, and the indications are that we will be able to make a little money. Handling charges will probably be the same as last year. At least, I have heard nothing to the contrary."

It is reported that a large block of coal has been chartered this week at 20 cents from Ohio ports to Duluth, single trip charters. Relative to this low rate a prominent vessel owner says: "The large modern steamer will hardly consent to carry coal at any figure, and the tonnage available for such work is not as plentiful as it used to be. We simply will not carry coal up the lakes at 20 cents. Rather than do so we will send our boats to Duluth light and if we can't get down cargoes we will lay them up. For the past few years we have been running our boats practically without any profit, just to keep the property from deteriorating, but we feel that we should share in the general improvement of business conditions, and we intend to do so if we can."

A dispatch from Duluth says: "The officials of the American Steam Barge Company received a telegram from I. M. Bowers of the Bessemer Steamship Company, saying that the Superior company would be given the contract for building the two new steel freight barges. The contract gives the barge works enough work to keep 1,000 men working for nearly a year. The boats are to be delivered in the spring of 1900. The two new barges will be of the 8,000-net-ton type, similar to the barge now building at the Superior yards. Each will be 460 feet in length, 50 feet beam, and 29 feet 6 inches in depth. The early decision of the Bessemer people was somewhat a surprise to the local company, but the present improved machinery at the works will enable the beginning of the work at once, and the officials say there will be no trouble in getting the boats out on contract time."

Mr. C. H. Keep, of Buffalo, the secretary of the Lake Carriers' Association, was a few days ago in conference with Mr. George P. McKay, the treasurer of the association for the purpose of drawing up a statement of the amount of money expended for range lights and other lighting on the lakes since the formation of the association. As has been announced before, Mr. F. J. Firth, the new president of the Lake Carriers' Association, will make an effort to have the government return the money thus expended. If he is successful in this it will be a long step toward inducing the government to maintain all the lights that are now supplied by the association. Mr. Keep said: "The work of furnishing a statement of the lighting done by our association is no simple matter and the amount involved will run well up in the thousands. The statement will be completed soon, however, and the chances of the return of the money to the Lake Carriers' is thought to be good."

The important suit to test the legality of the taxation upon ore on the docks was commenced in the Common Pleas Court. The plaintiff is the Cleveland Iron Mining Co. and the suit is brought against Treasurer Lander. The mining company says that it made a return for taxation last year of \$3,600, but the Board of Equalization increased that amount by adding \$20,000 for the average value of the ore shipped by the company to Cleveland. This addition imposed an additional tax of \$610 upon the company. The plaintiff says that ore is property in transit, and that a tax upon it is illegal and unconstitutional. It further says that if the ore is taxable the tax should be paid by the consignee. Solicitor Kaiser, in commenting upon this suit, said: "I am glad that this action has been brought, for it will determine definitely whether ore is taxable property. Mining companies have been dumping ore in Cleveland for years and leaving thousands of tons of it on the docks for years and have never before been assessed any taxes upon it, for the alleged reason that the ore was in transit and was not taxable."

DETROIT.

Special Correspondence to The Marine Record.

Senator McMillan gave notice on Wednesday that he would amend the sundry civil bill by inserting in it a provision appropriating \$330,000 for two revenue cutters on the lakes to take the place of those sent to the ocean at the outbreak of the war. He has a bill of that kind pending, but thinks the best way to get the cutters will be to provide for them in the big appropriation bill.

The Detroit & Cleveland Navigation Co. have secured the lease of the Fletcher Hardware Co. wharf at the foot of Shelby street. This puts the company in possession of all the dock room between Wayne and Shelby streets. Additional warehouse room will be constructed and all freight will be received and moved from the Shelby street side, thus freeing Wayne street from trucks and vans and giving the passengers free and uninterrupted access to the company's steamers.

A Ludington dispatch says it is believed that Lake Michigan is frozen from shore to shore, a thing which has not happened before in twenty-six years. The car ferry Pere Marquette reported but twenty minutes of clear sailing between Ludington and Manitowoc. The mercury dropped during the night to 14 degrees below, a point not reached before in twenty-two years. Only once before, in the winter of 1873, has the lake frozen clear across. The Flint & Pere Marquette people fear a suspension of navigation unless the weather becomes very much milder.

A representative of the Hill steamboat line will soon visit Port Huron to look the passenger and freight steamer Unique over with a view of purchasing her for their route on Green Bay in opposition to the Harts. The Unique is of 381 gross tons, 163 feet length by 20.5 feet beam and 11 feet depth of hold. She is considerably larger than the steamer Eugene C. Hart. The Unique is said to be a 17-mile boat. It is understood that the steamer C. Hill will be taken in part payment by the owners of the Unique if the deal is consummated. The Hill is valued at \$7,000. It is not thought here that the deal will go through.

Henry W. Cramp, vice-president of the big Philadelphia shipyards, has been visiting here this week and talking with Frank E. Kirby. Both refuse to say anything about the visit. It had been supposed that it might have bearing on the proposed consolidation of steel shipbuilding plants along the lakes, but at the dry dock works it is said that Mr. Cramp and Mr. Kirby are only talking over matters pertaining to vessels fixed over for the Navy during the war. Mr. McVittie, of the dry dock company, says their property has not been appraised with a view of entering into a trust, and he knows nothing of a meeting being called for the purpose of organization.

The new steel passenger steamer Pennsylvania, being built at the yards of the Detroit Dry Dock Company, for an Erie company, will be launched early next week, Miss Edith Streuber, of Erie, will perform the christening ceremony. It is intended to have the steamer completed by May 1st, and the owners have planned to commence regular daily trips between Erie and Buffalo on May 15th, leaving Erie in the morning and returning in the evening about 10 o'clock. The Pennsylvania is of steel, 225 feet long and 32 feet beam. She will be lighted throughout with electricity and will be furnished in elegant style. She will carry from 1,500 to 1,800 people, a large quantity of freight, and will have a guaranteed speed of not less than twenty miles per hour. Her cost will be about \$150,000. Invitations have been issued and large delegations of Erie, Cleveland and Buffalo citizens will make the first trip on the steamer.

The car ferry steamer Shenango No. 1 is still fast in the ice on Lake Erie, but has shifted her position to a point about two miles below Clear Creek, at the front of Long Point, Canadian side. W. Blanck, who left a week ago with dynamite to release the steamer, has returned to Detroit. "When we tried to get out to the craft the first time," said he "she was about fifteen miles out in the lake off Port Burwell. We made a trip toward her for eight miles over the ice and then struck clear water and were forced to take to the open boat we had along with us. But the ice crushed in about the sides of our skiff and we were forced to turn back. We made the attempt again the next day, crossing the wide stretch of ice on skates and pulling behind us a flat boat fitted with runners. The ice we went over was firm and glassy, though only from one to four inches thick. We reached the boat the next day and cleared away the ice around her with dynamite. Then we got the ferry to about two and a half miles below Clear Creek, but were again blocked at this point. We saw it was no use to make further efforts till the weather moderated and the ice in some measure cleared away. It is now piled up far higher than the gunwales of the craft and I am not exaggerating when I say it is fully forty feet thick." The Shenango has plenty of provisions on board for her crew of fifteen men. She is now also supplied with dynamite, which will be used on the ice as soon as the weather moderates.

Some confusion has arisen over the interpretation of the act of Congress passed two years ago requiring masters' and pilots' licenses to be issued every five years instead of one, as had always been the rule before that. The Board of Supervising Inspectors made a rule that a person applying for this license should pass an examination as to his knowledge of the pilot rules. Local inspectors on the lakes compelled all applicants for the five-year license to submit to this examination, and the masters have conceived the idea that unless the answers are submitted in writing the applicant will be rejected. Supervising Inspector Westcott explained

the situation as follows: "The board made the ruling, that if the holder of an original license turned it in before its expiration he should be given the new license without examination; but if he failed to do this he was to be examined as to his knowledge of the pilot rules. Preferably his answers should be submitted in writing, but if he is unable to write—and there are a few such cases—a verbal examination is sufficient. Of course he must know the rules thoroughly, or he gets no license. But every master of a boat sailing the lake to-day knows them. The rule was made to protect the men actively at work sailing from others ashore, who hold licenses from year to year, but who might take command of a boat and sail her and be in partial ignorance of the rules, and therefore a menace to themselves and everybody else. The rules are constantly changing, too, and it is necessary that at the expiration of the five years the applicants for renewal submit to another examination."

The annual meeting of the Inter-Lake Yachting Association was held here on Saturday evening. Delegates present were: Lou Coulton, Toledo Yachting Association; C. C. Hoke, Sandusky Yacht Club; William Hass, Put-in-Bay Yacht Club; G. T. Bliss, Erie Yacht Club; W. C. Jupp, Detroit Boat Club; Otto Barthell, West End Yacht Club; Commodore Jacobs, Detroit Yacht Club. Buffalo and Cleveland were not represented. Report of secretary-treasurer showed that receipts for year 1898 were \$720.67; expenses, including dues to Yacht Racing Union of Great Lakes and National Yachting Association of North America for 1899, \$662.10, leaving a balance on hand of \$58.57. Other matters pertaining to the good of the association were included in his report. Reports of the race and entertainment committees were interesting and very satisfactory financially. The following officers were elected for the year: Commodore Geo. T. Bliss, Erie Yacht Club; vice commodore, Geo. F. Anderson, Sandusky Yacht Club; rear commodore, Otto F. Bartelle, West End Yacht Club; fleet captain to be appointed by the commodore; secretary-treasurer, Chas. Reitzel, Erie Yacht Club; measurer, J. W. Hepburn, Toledo; fleet surgeon, L. C. Moore, M. D.; race committee, W. R. Huntington; Bert Bortree, John Rathbone, Ed. Jerome, John Holloway; delegates to Yacht Racing Union, Geo. F. Anderson, John Rathbone, Henry Tracy. The resignation of the Detroit Boat Club was accepted, but the association does not lose, as the yachting members of that club have formed a yachting division called the Detroit Boat Club Yachtsmen, and were elected members, Vice Commodore Rathbone being their delegate. The Up-River Yacht Club, of Toledo, Charles Ehrne, delegate, was also elected to membership in the association, which is now composed of ten clubs. Previous to the business meeting the delegates and visiting yachtsmen were given a fine banquet by the Detroit boys. John L. Dexter acted as toastmaster, and called on some of those present for speeches, stories or songs. The Minx, formerly Rear Commodore Berdan's yacht, of Toledo, and now owned by Commodore Shaw, of Detroit, will be the flagship of the new Detroit Boat Club Yachtsmen. John Rathbone will be vice commodore.

CHICAGO.

Special Correspondence to The Marine Record.

Ludington, Mich., Feb. 14.—The extremely cold weather continues here, and the lake is frozen as far as one can see, the thermometer showing a dip of 25 to 28 below zero last night close to the shore and from 30 to 35 below further inland.

The car ferry Pere Marquette and the steamer F. & P. M. No. 2, that have been out between here and Milwaukee three days, slowly worked their way to this harbor last night by breaking ice and moving in between the floating cakes.

National President Uhler, of the Marine Engineers' Association, will be here in a few days and will address the local lodge. All marine engineers are cordially invited. Mr. Uhler is making his usual regular tour and will probably visit every lodge in the country.

It is reported that the whaleback excursion steamer Christopher Columbus will make a series of excursions round the chain of lakes before going on her regular Milwaukee-Chicago run next summer. She will probably not be seen in Chicago much before the end of June.

A dispatch from Frankfort, Mich., says: "Capt. Ross, of the steamer Alice Stafford, which is icebound in Lake Michigan off this port, walked ashore on the ice. He says he encountered only two miles of open water in crossing the lake from Keweenaw to Frankfort. The Stafford left Keweenaw several days ago."

The Seymour Brothers, Manistee, have just completed the sale of the passenger steamer Petoskey, to Hart Bros. of Green Bay, Wis. The purchase price is \$45,000. Delivery is to be made about July 1st, when the new vessel now building for the Northern Michigan Transportation Company goes into commission, and until which time the Petoskey will remain on the Chicago-Mackinac route. The Petoskey was built in 1888.

The car ferry steamer Ann Arbor No. 2 reached Milwaukee on Monday accompanied by the Two Rivers fishing tug R. R. Endress. The No. 2 is minus her iron rudder, which was broken and lost in the ice off Frankfort, Mich. She also had a loose wheel, and it was to have the latter fastened that she was taken to Milwaukee. A new rudder has been ordered, but a fortnight's time will be required for its delivery. Meanwhile the disabled craft is to be towed between Manitowoc and Frankfort by one of the other car

ferry steamers of the line. It may be several days yet before the No. 2 can get into the stationary dry dock at the south yard because of the cold weather. The dock is at present occupied by the steamer City of Paris. Another arrival in crippled condition at Milwaukee this week was the steamer F. & P. M. No. 5 from Ludington. She broke her wheel in the ice at Manitowoc and will receive a new one in the stationary dry dock at the south yard after the car ferry has been attended to.

No further word has been received here as to the condition of the John S. Moran, the Crosby line freighter, crushed by the ice off Grand Haven on Friday. The vessel is believed by some to be still floating. A Grand Haven, Mich., dispatch says that the steamer Naomi, arrived at that port Sunday afternoon, having on board the crew of the Moran. The Moran was crushed by the ice twelve miles off Muskegon early on Friday morning, all efforts to save the vessel proving futile. Distress signals were blown and were heard by the Naomi, five miles distant in the ice pack. The Naomi went to the assistance of the Moran and after towing her for three hours gave up the attempt and the Moran was abandoned at one o'clock on Friday morning, with the crew all safe on the Naomi. Capt. McLeod, of the Moran, reports no end of ice. The loss of the boat was caused by ice tearing away the iron plates used as sheathing at the bow and cutting through. When abandoned the Moran was still floating, but the rails were under water. The boat was valued at \$35,000 and was owned by the Crosby Transportation Co. The cargo of flour was worth \$50,000. The hull was uninsured.

BUFFALO.

Special Correspondence to The Marine Record.

Captain W. P. Henry, superintendent of the Lehigh Valley's lake steamship line, has resigned. L. H. Van Allen, division superintendent of the Lehigh Valley, will also act as superintendent of the steamship line. The offices of the rail and lake line are consolidated by this change.

Maj. Thomas W. Symons, C. E., U. S. A., has written a letter to the commission appointed to investigate the decline in the commerce of the port of New York. He says the highest commercial interests of New York demand that the Erie canal improvements should be continued according to the present plan; that ample, convenient and cheap terminal facilities devoted exclusively to canal traffic should be maintained at Buffalo and New York, and that all restrictive legislation upon the use of the canal should be repealed.

Orders have been sent to Portsmouth, N. H., to prepare the barge Iron State for immediate service. The wages of the crews which are in arrears will be paid and the other matters will, it is said, be adjusted satisfactorily to all. The owners of the lake fleet to which the Iron State belongs have agreed to the proposition of the Atlantic Transportation Co. and the fleet of lake vessels will remain on the coast to be used in transporting coal between Newport News and New England points. The insurance companies, which have heretofore refused to insure the lake vessels, have reconsidered their decision and the vessels will be fully insured.

The Niagara Central Railroad will be extended from St. Catherines to Port Dalhousie on Lake Ontario, a distance of four miles, and possibly converted into an electric line. It will connect with a line of steamers for Toronto. The Empress of India, which ran between Port Dalhousie and Toronto, has been taken off and will run wild between Hamilton, Toronto and Charlotte. The Lakeside will run between Port Dalhousie and Toronto, and a new steamer will be added to the fleet. The Michigan Central, which connects with the Niagara Central, will not sever its traffic arrangements at Niagara-on-the-Lake with the Niagara River Navigation Co., to cater to the Dalhousie route.

The bid made by Hingston & Woods for dredge work on the Portage Lake canal proved a surprise to the other bidders and to contractors generally, as well as to some of the employees in the office of the United States Engineer. Their bid was 11 cents and 9 cents a yard, as against 27 cents and 15 cents, the highest of the nine bidders. Work that is expected of a new dredge that Hingston & Woods are having built enables them to make so low a bid. This dredge will have a dipper that will hold eight and one-fourth cubic yards. It will be the largest and most powerful dredge on the lakes, probably the largest used anywhere. The dipper will make a trip every forty-five seconds. The cable to operate this dipper will be two and a half inches in diameter. The largest dipper now at the head of Lake Superior is supposed to take up about six yards, but it is said that it really handles less than five yards.

SIR W. G. ARMSTRONG, Whitworth & Co., England, who have this year built and delivered the Sampo, and are now completing the Ermack, both specially designed ice-breakers for service in the Baltic, have just secured an order for a third vessel of the same type. Ice-breakers are becoming quite a specialty at Armstrong's. The year's shipbuilding at Armstrong's totals out to 15 vessels of 54,379 tons, of which six were men-of-war, all for foreign powers, and the remaining nine merchant vessels of varying type and size. The year's output is the best the firm has ever had, and though Harland & Wolf report a larger tonnage, not many other firms will have a similar record, to say nothing of the class of work involved on the fine, powerfully armed, high-speed cruisers which are the chief feature of Elswick's production.

PORT HURON.

Special Correspondence to The Marine Record.

Capt. Plough of the life saving station reports the ice very heavy as far as the eye can see. A late opening is looked for.

The coal dealers of Port Huron held a meeting on Thursday afternoon, which was of considerable interest to themselves, but more to the public in general. Owing to the recent advance in coal in Buffalo, the high freight rates, the extreme cold weather and the large demand, it was decided to raise the hard coal 50 cents a ton.

At the meeting of the common council, held on Monday evening, Wm. Jenks in his speech said that if the Jenks Ship Building Co. located on the Bunce farm it was the intention of the company to start a brickyard in connection with the plant. He said that the borings had demonstrated the fact that there was a large amount of clay suitable for making brick.

Ed. J. Kendall has a very choice collection of old pictures of tugs in the palmy days, to wit: Gen. Geo. B. McClellan, Kate Moffat, Sweepstakes, W. B. Castle, City of Tawas, all taken when the tugs were what was called open tugs, also has the sidewheel steamer Empire State, built at St. Clair in 1847, last but not least the ferry Sarnia, which plied between this city and Sarnia for a quarter of a century.

The Toledo Oil company has representatives in Port Huron and vicinity securing options on land for the purpose of sinking a large number of oil wells. Capt. Warwick has entered the employ of the company and will endeavor to secure a lot of valuable land in the vicinity of Port Huron. This company after investigating the work of the Michigan Developing Company has come to the conclusion that there is oil in this vicinity in paying quantities and will sink a large number of wells. The owners of the land are guaranteed one-tenth of the net proceeds.

In the case of the State of Michigan against the Lake St. Clair Shooting and Fishing Club and David A. Whitney, Judge Vance rendered a decision in favor of the state, with costs; holding also that the defendants are not entitled to any benefits arising from improvements they have made on the premises. This case involves title to the property of the "Old Club" at the Flats, and virtually turns it over to the State of Michigan. We understand that title to such other property at the Flats is also involved in this decision. Appeal to the Supreme Court is to be expected.

W. R. Austin has in his show window a very pretty photograph of the steamer W. H. Gilbert as she arrived at Duluth on December 12. The pilot house and upper deck are completely enveloped in ice. Capt. Kelley, who commanded the steamer, was on duty for 26 hours, and the pilot for hours before that port was reached was unable to see out from his position and had to wait until the ice was chopped away before he could get out. The captain was so completely covered with ice that his overcoat had to be cut off.

Capt. Joseph Pierce died at his home on Lapeer avenue this morning, aged 55 years. Mr. Pierce was in the employ of the Port Huron Ferry Co. for a number of years. The funeral announcement will be made later.

FLOTSAM, JETSAM AND LAGAN.

The Barrow-built torpedo-catcher Otter made over 31 knots on the Clyde measured mile last week, and the Birkhead 33-knotter Express had her propellers changed in dry-dock at Greenock, the bottom being recoated at the same time, preparatory to testing her paces over the Clyde course.

The Boston steamboat inspectors have secured two of the Tule life preservers washed ashore from the wreck of the lost steamship Portland. They will be thoroughly examined and tested. If found useless, the department will at once rescind the order allowing the use of this variety of life preservers.

The Almy Water Tube Boiler Co., installed their boilers in 34 vessels during 1898. This is in itself a record of its adaptability under varying circumstances. Their annual catalogue is now out with full particulars and will be sent to any address on application to the office, 178 Allen's avenue, Providence, R. I.

A further proviso has been added to the contract with the Allan and Dominion steamship companies for the Atlantic mail service by which the vessels of these companies will be required to await at Halifax the arrival of the Chinese mail, which by special contract with the Imperial Government is carried by the Canadian Pacific railway.

The United States built 130,000 tons of sail and steam vessels during the last six months and 275,000 tons during the year. Only the four "admiral" steamships for the West Indian service were built for foreign trade. Three Spanish prizes aggregating 7,000 tons were added by capture and four foreign built vessels of 12,000 tons total, by act of Congress.

This is just what one might have expected from a western girl and the story comes from a western paper: It was the first time she had been on a warship. "And this," the lieutenant went on to say, "is the quarter-deck." "And that deck over yonder!" she exclaimed, indicating the forecastle, with a pretty gesture, "is that the five-cent deck or the ten-cent deck?"—The Western girl was a beauty.

At the annual meeting of the Canadian Marine Engineers' Association the following officers were elected: Hon. president, O. P. St John; president, Harry Parker (acclamation);

1st vice-president, A. J. Woodward; secretary, S. A. Mills; treasurer, H. Brownley; inside guard, H. Bowler; auditors, D. L. Foley and E. J. O'Dell; council, Thomas Good; William Horwood, Rees Binch, P. J. Carr and J. E. Kane, Port Dalhousie.

The British have been cheering themselves with the statistics of the shipbuilding boom in 1898. British shipbuilders closed the year with about 2,000,000 tons of work on hand, which is nearly four times the total tonnage built in all foreign countries in 1897 and an increase of 500,000 tons on the shipping under construction at the outset of the year. The total value of mercantile shipbuilding in 1898 was £20,000,000 and the allied industries have naturally been stimulated.

TREASURY DECISIONS.

INVESTIGATIONS BY LOCAL INSPECTORS OF STEAM VESSELS.

Method of conducting investigations under section 4450, Revised Statutes, discretionary with local inspectors of steam vessels.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
WASHINGTON, D. C., February 7, 1899.

Sir: This Department is in receipt of your communication of the 11th ultimo, in which, referring to the decision of the local inspectors at San Francisco, Cal., in the investigations of the cause of the explosion of the steam drum of the boiler of the steamer T. C. Walker, you claim that said inspectors examined no witnesses at all who had any knowledge of the cause thereof, except the assistant engineer on watch, the chief engineer having been killed.

You further complain that the inspectors called in no experts at said investigation, nor gave the owners of said vessel an opportunity to offer expert testimony, or to assist in any other way to show the cause of said explosion, and you request another investigation by competent authority, the supervising inspector of the first district having refused a similar request from you, explaining his reasons therefor in a letter to you, a copy of which was inclosed in your letter.

In reply, you are informed that the investigation held by the local inspectors into the causes of the accident referred to by you was, it is assumed, held under the authority conferred upon them by section 4450 of the Revised Statutes, which is quoted for your information, as follows:

The local boards of inspectors shall investigate all acts of incompetency or misconduct committed by any licensed officer while acting under the authority of his license, and shall have power to summon before them any witnesses within their respective districts, and compel their attendance by a similar process as in the United States Circuit or District Courts; and they may administer all necessary oaths to any witnesses thus summoned before them; and after reasonable notice in writing, given to the alleged delinquent, of the time and place of such investigation, such witnesses shall be examined, under oath, touching the performance of his duties by any such licensed officer; and if the board shall be satisfied that such licensed officer is incompetent, or has been guilty of misbehavior, negligence, or unskillfulness, or has endangered life, or willfully violated any provision of this Title, they shall immediately suspend or revoke his license.

The law quoted, as will be seen, only authorizes the inspectors to investigate casualties to steamboats, their hulls or boilers, to the extent of determining whether the casualty resulted from the incompetency or misconduct of the licensed officers in charge of the vessel, and if so found, to suspend or revoke the license of the officer found delinquent, or her reasons for casualties than those for which the licensed officers may be found responsible being incidental only to such investigations.

In the case under consideration, the inspectors holding the investigation found evidence, in the shape of fusible plugs being melted out, that the water had been low in the boiler on the occasion of the explosion, and presumably was the cause thereof, whilst under the charge of engineer Richard J. Murphy and assistant engineer William H. Douglass, who had also previously discovered in the boiler an iron plug in the place of a fusible plug that had been melted out whilst the boiler was in charge of engineer Chas. T. Sampson, who had charge of the steamer previous to November 17, 1898. Neither of these officers had reported the fact to the local inspectors, as it was their sworn duty to do under the provisions of section 4448, Revised Statutes. Upon this condition of facts, the inspectors suspended the licenses of the three persons named, one for three months, the others for two months each, thus exhausting their authority in the case under the section of law heretofore quoted.

The only legal authority to reopen this case is by an appeal of one or all the suspended officers from the decision of the local inspectors under the provisions of section 4452, Revised Statutes, as you were previously informed in the supervising inspector's letter to you, dated January 6, 1899, a copy of which is found inclosed in your letter.

Referring to the statement in your letter that no opportunity was presented to the owners of the T. C. Walker to offer expert testimony, or to assist in any other way, to show the cause of said explosion, you are informed that under the law the conduct of the investigation was wholly discretionary with the local inspectors, and unless it can be shown that you offered to furnish testimony to the inspectors pending the investigation, and that they had unreasonably refused to consider the same, this Department can take no action thereon.

Respectfully yours,
L. J. GAGE, Secretary.
MR. H. J. CORCORAN, Stockton, Cal.

**SIR NATHANIEL BARNABY ON STEAM SPEEDS
AT SEA.**

The Watt anniversary lecture was delivered in Greenock Watt Institute on 20th of January by Sir Nathaniel Barnaby, K. C. B., his subject being "Steam Speeds at Sea."

Sir Nathaniel Barnaby pointed out that on the 21st of January, 1867, Mr. John Scott Russell gave the Watt lecture on the application of the inventions of Watt to modern steam navigation, and since that date the steam tonnage of the mercantile shipping of Great Britain had multiplied more than sixfold. In the Royal Navy there had also been a six-fold increase in these thirty-two years. The effective horse-power of the steamships in the Royal Navy was, in 1867, half a million; to-day it was, according to the Engineer-in-Chief, about three millions. If Scott Russell could be awakened from his dreamless sleep on that lofty hillside overlooking the English Channel at Ventnor, and could be told of this immense advance, even he would find his most sanguine anticipations as to the future of steam navigation overpassed. If they asked the experts concerning the advances that had been made in engine construction during these thirty two years, they would say that the pressures of the steam generated in the boilers had gone up in the largest ships from 30 lbs. per square inch to nearly 300 lbs. per square inch, that piston speeds had increased from 500 feet per minute to 900 feet per minute, and that the revolutions of the screw propeller had risen in very large ships from 75 per minute to 120 per minute, and in smaller vessels to over 400 per minute. Mr. Scott Russell had considerable influence in settling the elements of the design of the steam frigate Warrior, which was still upon the active list of the navy, and we had recently been told by the Engineer-in-Chief of the navy that the steam machinery of the torpedo destroyers gave the same horse-power as the Warrior's engines gave, with one-seventh of their weight, and with one-half the consumption of fuel. At the date of Mr. Scott Russell's lecture the crack Cunarder was the Russia. Her horse-power was 3100, with a coal consumption of 3 lbs. for each horse-power per hour. To-day the crack Cunarders were the grand ships built on the Clyde, with engines developing nine times as much power, and with a coal consumption per unit of power only two-thirds of that in the Russia. At the commencement of the reign of the Queen no passages at speeds exceeding 14 knots could be made, however urgent the circumstances. Her Majesty had lived to see with her own eyes a steam vessel running at 34 knots an hour, and they had accomplished this within 60 years. A Scotsman laid the foundation, an Englishman made the three greatest steps in it, and an Irishman has made the last. If he were asked who set the fashion for higher speeds in vessels of war, a fashion to which so much was now sacrificed, he should say that the Armstrong firm originated it in ships built for weak foreign navies to whom speed would be of great importance. It was in 1880 that Mr. George Rendel designed for the Armstrong firm some vessels of war for China 210 feet long, and of 16 knots speed. These he followed up in 1882 by the design of the Esmeralda, of 18½ knots. She was 270 feet long. These vessels, and particularly the Esmeralda, did two notable things. They made the fortune of the Armstrong firm; for the Esmeralda type, sometimes with a narrow strip of side armor, but more often with none, was now in high favor in all navies. Secondly, they led to increases of speed in all ships of war, and to the abandonment of sail power. Steam had been spoiling the sailor in merchant ships for many years; let them see to it or it wou'd do the same in ships of war. Up to 1871 it was thought impossible to make small steam vessels go as fast as the fastest large ones, but in that year Mr. Thornycroft built the Miranda, in which 35½ horse-power was developed for every ton weight of machinery, including boilers and water. The Lucania traveled over nearly four times her own length in a minute; the Powerful over more than four times; the Miranda, which was 50 feet long, went well over 30 times her own length in a minute; and the Turbina, 100 feet long, had done somewhat better. Mr. Thornycroft, in his several successes, had given us a new form of boat, a new system of construction, a new form of propeller, and an affective way of generating steam by methods which had been unsuccessful and abandoned. Mr. Parsons had given a new marine steam engine. He also confirmed, by dearly-bought experience, the fact of a serious and only recently recognized limitation in the power of the screw propeller, brought to light first by Mr. Thornycroft in his trials of the Daring. Mr. Parsons first built the Turbinia with one screw propeller, and then found he must put in three shafts and nine propellers in order to meet

these difficulties and get full effect out of his high speed engines. He was now building engines of 10,000 and 12,000 horse-power for destroyers of some 320 tons displacement. He said that in applying turbine engines of, say, 30,000 horse-power to a large passenger vessel or warship, four screw shafts with two screws on each shaft would probably be necessary in order to get over the propeller limitations in efficiency which have been referred to. If the American owners, in building the proposed new mail steamers, should apply Parsons' engines successfully they would not only get great smoothness of working, but they would do good service to the state by providing it with what would be real protected cruisers, since all the machinery might be placed below an under-water protecting deck. The propelling power in a ship was largely expended in making trains of waves. The surface water put in motion by the passage of the ship reached the position of rest in that way, and the ship had to pay for the rearrangement, and the wave-making expenditure increased within certain limits at a very rapid rate as the speed of the ship increased. When the limit was reached there was an apparent change in the behaviour of the fluid through which the vessel was forced. In a vessel 185 feet long this change for the better began when the vessel reached a speed of 24 knots. The longer and the heavier the ship, the higher was the speed at which nature seemed to begin to favor the engineer in his attempts to fly, but in what way she makes this apparent change in her methods it is not easy to explain. Large ships gained nothing by this. A ship of 500 feet long would apparently not begin to benefit by this peculiarity in wave-making until she reached a speed well over 100 knots an hour. This consideration pointed, with many others, to the doubtfulness of the course taken at present in all navies where the size of ships of war underwent perpetual increase to get small increases in speed. They would probably have to contend with vessels formed along an entirely different line of development, not as their rivals but as foes, always commanding speeds unattainable by the ships, and perfecting, as they doubtless would weapons suitable for their condition.

OUTPUT OF COAL WORTH MORE THAN THAT OF GOLD.

Probably not many people are aware that the coal mined in the United States annually is worth more than three times as much as the gold mined. The product of the anthracite fields alone exceeds in value the output of the gold mines of this country, Canada and Alaska, which last year amounted to over \$50,000,000. East of the Rocky Mountains there are 192,000 square miles of coal lands, and the yearly output is nearly two hundred million tons. Geologists estimate the great coal fields of the world as follows: China, 200,000 United States, east of the Rockies, 190,000; Canada, 65,000; India, 35,500; New South Wales, 24,000; Russia, 20,000; and the United Kingdom, 11,500 square miles. There are many deposits in other countries, but their extent is inconsiderable. England's coal area is small; still she for years produced more than any other country. Now the United States is ahead. English coal veins are thin; one only fourteen inches wide has been worked 1,200 feet down. On the other hand, there are veins in the Pennsylvania anthracite region sixty feet thick, and in the bituminous regions eighteen feet thick. Our Appalachian coal fields are the largest known, and alone could supply the whole world for centuries to come.

THE torpedo boat destroyer Hai Lung, built by Schichau of Elbing, Germany, for the Chinese government, on her trial trip exceeded by far any speed heretofore made on water, outrunning the best performance of the Turbinia, nearly two years ago. The vessel, with a full trial-trip load, made an average speed of over 35 knots an hour, over an 18½-knot course, the maximum speed attained during the trip being 36.7 knots, or 42.26 miles per hour. The vessel is 197 ft. long and has a displacement of 280 tons. The engines are capable of developing about 6,000 indicated horse-power. With natural draft the boat can make from 30 to 31 knots. The coal bunker capacity is 67 tons.

THE total length of rivers and canals in European Russia is 67,596 miles, of which 46,202 miles are available for use —i.e., 30,338 miles navigable and the remainder for floating purposes only. The canals aggregate 499 miles in length, and canalised rivers 648 miles. The Volga alone accounts for nearly 50 per cent. of the navigable waterways. During the last five years the Russian Government has devoted nearly 150,000,000 francs (£6,000,000) to the improvement of navigable waterways.

THE STEAMBOAT INSPECTION DISTRICTS.

The United States steamboat inspection districts are divided as follows:

First District—This embraces all waters and rivers of the United States west of the Rocky Mountains, and is under the jurisdiction of Capt. John Bermingham, with headquarters at San Francisco, Cal. This is one of the largest districts in the country, and although the tonnage is not as great as many others, its territorial area is immense. It takes in the Alaskan waters and goes southward down to the northern line of Mexico. The Great Basin, with Salt Lake as its center, with no outlet to the sea, is included in it as is also the Columbia with its numerous tributaries, many of them heading in the great continental divide.

Second District—This embraces the waters of the Atlantic Coast rivers and tributaries between the Bay of Passamaquoddy and Cape Charles. George H. Starbuck is the Supervising Inspector, with headquarters at New York City.

Third District—This embraces the waters of the Atlantic Coast rivers and tributaries between Cape Charles and Cape Sable. John W. Oast, with headquarters at Norfolk, Va., is the Supervising Inspector.

Fourth District—This embraces the Mississippi river and tributaries, from above Greenfield, Mo., (which is a few miles above the mouth of the Ohio river), up to and including Keokuk, Io.; the Illinois river below Peoria, and the Missouri river up to the mouth of the Niobrara river at its junction with the Missouri river. Capt. Ralph J. Whitledge is the Supervising Inspector, with headquarters at St. Louis, Mo.

Fifth District—This embraces the upper Mississippi river and its tributaries above Keokuk, Io.; the Red river of the north, and that part of the Missouri river and its tributaries above its junction with the Niobrara river, and all that portion of Lake Superior bounded by the States of Minnesota and Wisconsin. William R. Tibbals, with headquarters at Dubuque, Io., is the Supervising Inspector.

Sixth District—This embraces the Ohio river and tributaries up to and including Carrollton, Ky., and the Mississippi river and tributaries from Greenville, Miss., up to Greenfield, Mo. E. L. Dorsey, is the Supervising Inspector, with headquarters at Louisville, Ky.

Seventh District—This embraces the Ohio river and tributaries above Carrollton, Ky., to the headwaters, with S. R. Crumbaugh, of Cincinnati, O., as Supervising Inspector.

Eighth District—This embraces all waters of the lakes north and west of Lake Erie, with their tributaries, except that portion of Lake Superior which is bounded by the States of Minnesota and Wisconsin, and also includes the upper portion of the Illinois river, down to and including Peoria, Ill. C. H. Westcott is the Supervising Inspector, with headquarters at Detroit, Mich.

Ninth District—This embraces all the waters of the river St. Lawrence, Lakes Erie, Ontario and Champlain and their tributaries. Capt. Stone, with headquarters at Cleveland, O., is the Supervising Inspector.

Tenth District—This embraces the coast and tributary waters of the Gulf of Mexico, between Cape Sable and the mouth of the Rio Grande river, and the Mississippi river and tributaries to Greenville, Miss. John A. Cutter, is the Supervising Inspector, with headquarters at New Orleans, La.

SUPERSTITIOUS.

Talk about sailors being superstitious, the following from "Graphite," issued in the interest of Dixon's graphite productions, and for the purpose of establishing a better understanding in regard to the different forms of graphite and their respective uses, copyrighted by the Joseph Dixon Crucible Co., Jersey City, N. J., is simply a commercial daisy.

"Talking of hoodoos and mascots," said a member of the stock exchange, "the boys on the floor of the exchange are as suspicious as a lot of sailors. If you don't believe it you look at the lead pencils they are using the next time you are in the building."

"You won't find a man using a long lead pencil. Why? Because a long pencil is a hoodoo of the worst kind. They always cut a new pencil in half before they sharpen it. Some of these pencils acquire the reputation of being lucky."

"Less than a week ago I came down without my pencil, which, by the way, is a lucky one—every memorandum made with that pencil results in a profit for me—and I borrowed one from a friend on the floor. He handed me a stump about an inch long and said: 'You can use that; it's a lucky pencil.'

"Sure enough, I made two deals in the morning, and each netted me a handsome profit."

"I was about to make a memorandum of some stock I had bought, when my friend approached me and said:

"Here, take this pencil and let me have mine again. I've lost on every deal since I loaned it to you."

"Sure enough, I lost on that deal and the luck went back to the owner of the pencil."

"When you get hold of a lucky pencil you want to hang to it."

"Some of the boys have little lucky pencils not more than an inch long, and they gnard them as they would their lives."

"If you, through carelessness or accident, cause them to break the lead point they lose whatever regard they have for you and, forever afterward regard you as inimical. Some of them wouldn't take \$5 for a little piece of pencil worth considerably less than a cent."—New York Press.

"Well, we are certainly bad enough but these shore people are, or seem to be, able to give us cards and spades and beat us on our own ground. Sailors are not superstitious, but what they know, they think they know."

UNSEAWORTHY VESSELS.

To Collectors of Customs, Shipping Commissioners, and others:

You are requested to bring to the notice of owners, agents and masters of vessels the provisions of sections 7, 8, 9, 10, and 11 of the act approved December 21, 1898. These provisions of law will go into effect on February 20, 1899. They do not apply to fishing or whaling vessels or yachts.

Section 7. That section 4556 of the Revised Statutes be, and hereby is, amended so as to read as follows:

"Sec. 4556. If the first and second officers under the master or a majority of the crew of any vessel bound on any voyage shall, before the vessel shall have left the harbor, discover that the vessel is too leaky or is otherwise unfit in her crew, body, tackle, apparel, furniture, provisions, or stores to proceed on the intended voyage, and shall require such unfitness to be inquired into, the master shall, upon the request of the first and second officers or such majority of the crew, forthwith apply to the judge of the district court of that judicial district, if he shall there reside, or, if not, to some justice of the peace of the city, town, or place for the appointment of surveyors, as in section 4557 provided, taking with him two or more of the crew who shall have made such request; and any master refusing or neglecting to comply with these provisions shall be liable to a penalty of \$500."

Sec. 8. That section 4557 of the Revised Statutes be and hereby is, amended to read as follows:

"Sec. 4557. The judge, or justice, in a domestic port, shall upon such application of the master, or commander, issue his precept, directed to three persons in the neighborhood, the most experienced and skillful in maritime affairs that can be procured; and whenever such complaint is about the provisions one of such surveyors shall be a physician or a surgeon of the Marine Hospital Service, if such service is established at the place where the complaint is made. It shall be the duty of such surveyors to repair on board such vessel and to examine the same in respect to the defects and insufficiencies complained of, and make reports to the judge, or justice, as the case may be, in writing, under their hands or the hands of two of them, whether in any or in what respect the vessel is unfit to proceed on the intended voyage, and what addition of men, provisions or stores, or what repairs or alterations in a body, tackle, or apparel will be necessary; and upon such report the judge or justice shall adjudge and shall indorse on his report his judgment whether the vessel is fit to proceed on the intended voyage, and, if not, whether such repairs can be made or deficiencies supplied where the vessel then lies, or whether it is necessary for her to proceed to the nearest or most convenient place where such supplies can be made or deficiencies supplied; and the master and the crew shall, in all things, conform to the judgment. The master or commander shall, in the first instance, pay all the costs of such review, report or judgment, to be taxed and allowed on a fair copy thereof, certified by the judge or justice. But if the complaint of the crew shall appear upon the report and judgment to have been without foundation, the master or commander, or the owner or consignee of such vessel, shall deduct the amount thereof, and of reasonable damages for the detention, to be ascertained by the judge or justice, out of the wages of the complaining seamen."

Sec. 9. That section 4558 of the Revised Statutes be, and hereby is, amended to read as follows:

"Sec. 4558. If, after judgment that such vessel is fit to proceed on her intended voyage, or after procuring such men, provisions, stores, repairs or alterations as may be directed, the seamen, or either of them, shall refuse to proceed on the voyage, he shall forfeit any wages that may be due him."

Sec. 10. That section 4559 of the Revised Statutes be, and hereby is, amended to read as follows:

"Sec. 4559. Upon a complaint in writing, signed by the first or second officer and the majority of the crew of any vessel while in a foreign port, that such vessel is in an unsuitable condition to go to sea because she is leaky or insufficiently supplied with sails, rigging, anchors, or any other equipment, or that the crew is insufficient to man her, or that her provisions, stores, and supplies are not, or have not been during the voyage sufficient and wholesome; thereupon, in any of these or like cases, the consul, or a commercial agent who may discharge any duties of a consul, shall cause to be appointed three persons, of like qualifications with those described in section 4557, who shall proceed to examine into the causes of complaint, and they shall be governed in all their proceedings and proceed as provided in section 4557."

Sec. 11. That section 4561 of the Revised Statutes be, and is hereby, amended to read as follows:

"Sec. 4561. The inspectors in their report shall also state whether in their opinion the vessel was sent to sea unsuitably provided in any important or essential particular, by neglect or design, or through mistake or accident; and in case it was by neglect or design, and the consular officer approves of such finding, he shall discharge such of the crew as request it, and shall require the payment by the master of one month's wages for each seaman over and above the wages then due, or sufficient money for the return of such crew as desire to be discharged to the nearest and most convenient port of the United States, or by furnishing the seamen who so desire to be discharged with employment on a ship agreed to by them. But if in the opinion of the inspectors the defects or deficiencies found to exist have been the result of mistake or accident, and could not, in the exercise or ordinary care, have been known and provided against before the sailing of the vessel, and the master shall in a reasonable time remove or remedy the causes of complaint, then the crew shall remain and discharge their duty. If any person knowingly sends or attempts to send or is party to the sending or attempting to send an American ship to sea, in the foreign or coastwise trade, in such an unseaworthy state that the life of any person is likely to be thereby endangered, he shall, in respect of each offense be guilty of a misdemeanor, and shall be punished by a fine not to exceed one thousand dollars or by imprisonment not to exceed five years, or both, at the discretion of the court, unless he proves that either he used all reasonable means to insure her being sent to sea in a seaworthy state, or that her going to sea in an unseaworthy state was, under the circumstances, reasonable and justifiable, and for the purposes of giving that proof he may give evidence in the same manner as any other witness."

EUGENE T. CHAMBERLAIN,
Commissioner.

Approved:

O. L. SPAULDING, Acting Sec'y.

**LLOYD'S QUARTERLY SHIPBUILDING RETURNS
VESSELS UNDER CONSTRUCTION.**

From the returns compiled by Lloyd's Register of Shipping, it appears that, excluding warships, there were 584 vessels of 1,401,087 tons gross under construction in the United Kingdom at the close of the quarter ended 31st December 1898. The particulars of the vessels in question are as follows, similar details being given for the corresponding period in 1897 for the purpose of comparison:

Description.	Dec. 31, 1898. STEAM.	No. Gross Tons.	Dec. 31, 1897. STEAM.	No. Gross Tons.
Steel.....	508	1,389,300	426	1,000,764
Iron.....	50	8,850	51	8,193
Wood and composite.	2	141	3	235
Total.....	560	1,398,291	480	1,009,192
SAIL.				
Steel.....	6	1,090	4	2,038
Iron.....	...	1	226	
Wood and composite.	18	1,706	20	1,863
Total.....	24	2,796	25	4,127
Total steam and sail.	584	1,401,087	505	1,013,319

From December, 1896, the returns of Lloyd's Register have shown a steady increase in the amount of tonnage under construction in the United Kingdom. By the end of 1897 the work in hand reached a total of 1,013,000 tons. These figures—themselves almost certainly without precedent in the history of the shipbuilding industry—are now exceeded by no less than 387,000 tons.

Of the vessels under construction in the United Kingdom at the end of December, 504 of 1,066,998 tons are under the supervision of the surveyors of Lloyd's Register with a view to classification by this society. In addition, 40 vessels of 119,010 tons are building abroad with a view to classification. The total building at the present time under the supervision of Lloyd's register is thus 544 vessels of 1,186,008 tons. Details of this total follow:

	Gross Building in United Kingdom for home ac- count, for sale, etc.....	No. Tonnage.
Building in United Kingdom for foreign and colonial account.....	444	904,077
Building abroad for foreign and colonial ac- count and for sale.....	60	162,921
Total building on 31st December for classi- fication in Lloyd's Register Book.....	40	119,010
	544	1,186,008

OTHER DETAILS.

The following details concerning the shipbuilding work of the United Kingdom during the past three months may be added:

During Quarter ended	STEAM.	SAIL.
Dec. 31, 1898.	No. Gross Tons.	No. Gross Tons.
Vessels commenced.....	187	435,898
Vessels previously com- menced, but on which no further progress has been made.....	12	1,910
Vessels launched.....	202	432,125
	4	310
	1	28

WORK IN HAND IN PRINCIPAL DISTRICTS.

The following table gives the total figures for vessels now under construction in the principal shipbuilding districts of the country, as compared with those for the same period last year. Each district, of course, includes places in the neighborhood of the port after which it is named:

	Dec. 31, 1898.	Dec. 31, 1897.
Barrow, Maryport, and Workington.....	11	20,895
Belfast.....	21	184,344
Glasgow.....	127	306,041
Greenock.....	66	214,859
Hartlepool and Whitby.....	30	88,681
Middlesbrough and Stockton.....	34	99,792
Newcastle.....	83	253,913
Sunderland.....	49	168,109
	50	153,612

WARSHIPS UNDER CONSTRUCTION IN THE UNITED KINGDOM.

In order to afford a comprehensive view of the shipbuilding in progress throughout the United Kingdom, the following statement of the war vessels which are at present under construction has been compiled. For this statement it has been assumed that a vessel may be regarded as "under construction" from the commencement of the laying of her keel at the time when she is ready for her steam trials. Of course, when this latter stage is reached, the guns have usually still to be placed on board, and the vessel to be fitted out, before she is ready to be commissioned; but she is, nevertheless, structurally complete:

Nationality—Description.	No.	Tons Displace- ment.
BRITISH.—		
First-class battleships.....	12	167,700
First-class armored cruisers.....	5	60,000
First-class protected cruisers.....	2	22,000
Second-class protected cruisers.....	3	16,800
Third-class protected cruisers.....	6	12,940
Gunboats.....	4	2,800
Sloops.....	6	5,880
Torpedo boat destroyers.....	17	5,440
Royal yacht.....	1	4,700
Total.....	56	298,260

FOREIGN OR NOT STATED.—		
Armored vessels.....	7	83,920
Protected cruisers.....	5	20,870
Torpedo boat destroyers.....	15	4,620
Torpedo boats.....	7	980
Other vessels.....	1	2,335
Total.....	35	112,725

BRITISH AND FOREIGN.—Total.....

91 410,985

DANGER TO GREAT LAKE LEVELS.

J. McMullen, M. P., for North Wellington, Ont., recently spoke of the danger to the Canadian lake levels from the construction of the Chicago drainage canal, which will soon be completed, and pointed out that in any scheme for the deepening of the Georgian Bay harbors the influence of this work on lake levels must be considered. When the St. Clair flats were deepened a number of years ago, the increased flow of water reduced the lake levels in the upper waters by almost three feet. In the case of the drainage canal, which would turn a large part of the outflow from Lake Michigan into the Mississippi, instead of the St. Lawrence system, the danger was very real. It would probably lower the water level on the Georgian Bay a foot or more.

From a report of the U. S. engineers it appears that the drainage canal was constructed under a state charter, and that the U. S. will have no jurisdiction until the canal becomes navigable water. The outflow by the canal will be very great. It was originally projected with a width of 250 feet and a depth of 20 feet. The width as actually constructed is, in places where rock was met, 125 feet. The flow will be 10,000 cubic feet per second. The Niagara flow is 260,000 cubic feet per second. The taking away of this amount of water now reaching the ocean by the St. Lawrence will materially diminish the flow over Niagara and lower the lake levels, especially the level of Lake Huron. It is Mr. McMullen's belief that the Dominion government should at the earliest moment serve notice upon the U. S. government that a material lowering of lake levels following upon the opening of the drainage canal would be regarded as a cause for a claim for damages on the part of the Dominion.



ESTABLISHED 1878.

Published Every Thursday by

THE MARINE RECORD PUBLISHING CO.,
Incorporated.C. E. RUSKIN,
CAPT. JOHN SWAINSON,
THOS. WILLIAMS, Chicago,CLEVELAND,
Western Reserve Building.

SUBSCRIPTION.

One Copy, one year, postage paid,	\$2.00
One Copy, one year, to foreign countries, Invariably in advance.	\$3.00
<hr/>	

ADVERTISING.

Rates given on application.

All communications should be addressed to the Cleveland office.

THE MARINE RECORD PUBLISHING CO.,
Western Reserve Building, Cleveland, O.

Entered at Cleveland Postoffice as second-class mail matter.

CLEVELAND, O., FEBRUARY 16, 1899.

THE time for discussing different plans for the upbuilding of our merchant marine in the foreign trade has passed by. The true friends of American shipping will not divide upon policies, since a plan has already received the approval of the proper committees in each branch of Congress, a bill to carry it into effect now hanging upon the respective calendars of each branch of Congress. All the enemies of American shipping revival will be aligned against that bill—the foreign lobby will be doing its utmost to prevent its passage. In such a condition no man can claim to be a friend of American shipping and yet place himself in the ranks of the opponents of that bill. The enemy's camp is no place for the real friends of American shipping.

HON. J. HENNIKER HEATON, one of the best known members of the British Parliament, in a paper published in the North America Review, in 1894, thus expressed his amazement at the neglect of American shipping interests by the Government of the United States: "As a consequence of refusing \$5,000,000 a year in subsidies during thirty years to native shipowners, or \$150,000,000, the United States had to pay in the same period no less than \$3,000,000,000 for freights, while her mercantile marine dwindled into insignificance." But the passage of the bill now upon the calendars of each branch of Congress, favorably reported by the proper committees, will correct the neglect thus vividly stated, and, as a consequence, the next thirty years will find the United States far on the way toward redeeming itself. That bill will give us our proper rank in the world, and while providing employment for our people, strengthen the national defense, if it becomes a law.

BILLS offering bounties on pig iron manufactured from the ores of their respective States, have been introduced in the Legislatures of Minnesota, Wisconsin and Michigan. In Minnesota the discussion is taking up much newspaper space, the articles including two by Dwight E. Woodbridge, of Duluth, in the Minneapolis Journal. The first canvasses the question of cost of making pig iron in Minnesota as compared with the cost at Pittsburg, Chicago and other seats of the industry; the second discusses the natural market for Minnesota pig iron. The bill before the Legislature provides for a bounty of 50 cents a ton on all pig iron manufactured in the State from Minnesota ores in the next ten years. It has been reported favorably in the House and a similar bill is pending in the Senate. A similar bill is before the Legislature of Wisconsin, urged by business men of Ashland, Milwaukee and West Superior. It provides a bounty of fifty cents a ton on pig iron that shall be manufactured by furnaces hereafter erected in Wisconsin, but does not require that Wisconsin ores be used. Michigan, not to be outdone, has a bounty bill. It provides a bounty of \$1.00 a ton for five years on pig iron made in Michigan from Michigan ores.

MORE SHIPS MEAN LOWER FREIGHTS.

Some misguided opponents of American shipping revival through the operation of such a bill as that now pending in Congress, have declared that for the government to compensate our ships to enter the foreign trade would be to restrict the number of ships offering for the carriage of our exports, and thus cause an increase of freight rates that that would be paid by the producers in the United States. A moment's reflection will show the utter fallacy of this statement. In fact, just the reverse will be true. If the so-called Hanna-Payne shipping bill should lead to the construction of several millions of tons of ships in American shipyards—as now seems to be generally admitted would follow its enactment—the result would be such an accession of shipping offering all over the world for the commerce there is to carry as to inevitably lead to a substantial and a permanent reduction in freight rates. More ships would compete for the cargoes, and the keener the competition between the ships, the lower would go the rates. Of course such a condition would stimulate an increased commerce, but the producers, instead of being the sufferers because of the increased shipping would actually be the beneficiaries.

If, as is believed, the pending shipping bill caused the construction of say 5,000,000 tons of ships, which it is calculated is about the aggregate of the tonnage that is employed in carrying the foreign commerce of the United States, the existing 5,000,000 tons of shipping now doing our foreign carrying would not immediately disappear from the face of the ocean. On the contrary, the present ships would strive all the harder to compete with the new ships, and that strife would all inure to the benefit of the producer, admittedly the primary beneficiary of the reduction in freights.

There is another point in that connection worthy of some consideration. Progress in shipbuilding, as in everything else, is manifested by economies—economies, if you please, in coal consumption, or in number of people employed, or divers and sundry ways, the number of which, distributed over a modern steamship, is very large, and, as experience constantly suggests changes that effect economies, as each successive ship is built these changes that have stood the test of trial are adopted, and the ship of the present year is always possible of cheaper operation than the ship of last year, or of five years ago. Let the United States, therefore, suddenly become a great shipbuilding nation—such as the enactment of the pending shipping bill would effect—and what would occur? American ingenuity would be applied to the problems of ocean navigation with results as helpful to commerce as has resulted from the progressive economies in railroad transportation, in which field of effort this nation stands pre-eminent. The more Americans, with their superior intelligence and their genius for their scientific utilization of mechanics to produce lower costs of production, without increasing the physical effort necessary for such production, apply their talents to the more economical construction and operation of ships, the less will be the freight earnings necessary to produce a reasonable profit to the owner. So soon as a type of ship possessing superior economies in production and operation is sufficiently multiplied to have an effect upon competitive shipping, that effect is to reduce freight charges universally. It may, therefore, be accepted as a truism, that if Congress will supply the needed incentive for the construction in the United States of a fair share of the ships our foreign commerce employs, the producers of the world generally will be the beneficiaries, and, through the producers, the consumers; that is to say, all mankind will be favorably affected by the application of American talent to the construction and operation of a shipping in the foreign trade upon an extended scale.

Lower rates of freights may multiply production, and one hand thus is made to serve the other, and man is able to secure more of the necessities and luxuries of life in the changed condition than he was able to under the old state of things.

Great Britain may be said to-day to possess a monopoly of the world's shipbuilding, since her shipbuilders turn out 80 per cent. of the new shipping built year by year. Superficially, it is true that cheaper construction must be the main secret of her monopoly, but to enter here into an exposition of the multitude of diverse influences that are exerted, in some cases unconnected with shipping, or commerce, per se, to produce the result, would be both wearisome and unnecessary. It may be boldly asserted that to confine an industry within the limits of one nation is to restrict the possibilities of its more economical development. In other words, if all nations built substantially the shipping their commerce employs, then the people of all nations would be

studying the economies of production and operation, instead of that study being confined to one nation alone. The result of more widespread and more equitable distribution would tend to more rapid and greater economies.

OUR NATIONAL WEAKNESS.

In his great work, Sea Power, Capt. Mahan makes it very clear that naval power is soon exhausted, if there does not also exist mercantile ships and seamen as a reserve force to keep the warships upon the sea, and to improvise others as auxiliaries. He points out the great danger that threatens this nation, at any time, lacking a strong navy, and entirely denuded of a merchant shipping and trained seamen and firemen. On that point he well says:

"The United States has not that shield of defensive power behind which time can be gained to develop its reserve of strength. As for a seafaring population adequate to her possible needs, where is it? Such a recourse, proportionate to her coast line and population, is to be found only in a national merchant shipping, and its related industries, which at present scarcely exist. It will matter little whether the crews of such ships are native born or foreign born, provided they are attached to the flag, and her power at sea is sufficient to enable them to get back in case of war. When foreigners by thousands are admitted to the ballot, it is of little moment that they are given fighting room on board ship. Though the treatment of the subject has been somewhat discursive, it may be admitted that a great population following callings related to the sea is, now as formerly, a great element of sea power; that the United States is deficient in that element, and that its foundations can only be laid in a large commerce under her own flag."

It is well worth our while to heed while yet we may, the warning sounded eight or ten years ago, and more than ever necessary for our adequate protection. Senator Hanna has proposed, in a bill now receiving Congressional attention, to arm this nation with a merchant shipping and citizen seamen. Since the nation will be benefited by the strength it would receive from merchant shipping and seamen, and since other nations pay between twenty and twenty-five millions of dollars annually to fortify themselves with merchant ships and seamen, Senator Hanna proposes that the Treasury of the United States shall be drawn upon for similar aid, for a similar need. If Congress is wise it will adopt the Hanna shipping bill at this session, so that our national defense, through a merchant marine, will be no longer delayed.

EXPORTS AND IMPORTS.

The bureau of statistics has just made public the statement of exports and imports for the month of January and for the seven months of the present fiscal year. The statement shows that the total exports of merchandise for January were \$115,515,954, as compared with \$108,426,674 in January, 1898, and the imports \$58,472,315, against \$50,827,714 in 1898, making an excess of exports over imports for January of \$57,043,639, compared with an excess of exports in January, 1898, of \$57,598,960.

The gold exports in January, 1899, were \$2,330,503 and the imports \$6,066,080, making an excess of imports of \$3,735,577, against an import excess in January, 1898, of \$3,834,751. For the seven months ended January 31, 1899, the excess of gold imports was \$50,994,794, against an excess of the corresponding period of the previous year of \$22,449,230.

The exports of silver in January, 1899, were \$5,358,900 and the imports \$2,591,718, an excess of exports of \$2,767,182, against an excess in January, 1898, of \$1,766,359.

For the seven months ended January 31, 1899, the excess of silver exports was \$14,435,705, against an excess for the same period ended January 31, 1898, of \$14,238,859.

JOHN ROACH said that, before commencing the business, he made a thorough investigation and satisfied himself that we had all the great natural resources for iron ship building superior to any other nation in the world. Yet, with all natural advantages our foreign shipping interest is almost the only one whose growth is downward. When we behold the prosperous condition of our protected coasting tonnage, the remarkably flourishing condition of England's foreign shipping, the only interest she has protected, and the magnificent protected lines of steamers of other countries, whose natural resources for ship building, when compared to ours, are even more marked than their political inferiority, the conclusion is irresistible that the failure to extend the application of the American policy of protection to our foreign navigation interests is the reason why we have no merchant marine.

CUBAN IRON ORE OPERATIONS.

The imports of iron ore from Cuba to the United States are expected to be larger for 1899 than for several years preceding, and the trade with England and Germany, in Cuban ores, which was started in 1897, is expected to increase. Of the extent of the iron mining operations in Cuba and the prospects of the various companies, interesting information was given by Jennings S. Cox, Jr., manager of the Spanish-American Iron Co., to Special Commissioner Robert P. Porter who visited the Santiago district in the latter part of last year.

"The only mines at present being worked in the province of Santiago are iron and manganese. Copper mines near the village of Cobre, 12 miles west of the city of Santiago de Cuba, were formally operated by English companies, and a railroad connected the place with Santiago bay, whence the ore was shipped.

"In order to encourage mining of the ores the crown of Spain issued on April 17, 1883, a royal decree that for 20 years from that date the mining companies should be free from all tax on the surface area of all claims on iron or combustibles; that ores of all classes should be free from all export taxes; that coal brought in by mining companies for use in their work should be free from all import duties; that combustibles should be exempted, as well as iron ore, from the 3 per cent. tax on raw materials; that mining and metallurgical companies should be free from all other impost; that for five years mining companies should be exempt from payment of duties on all machinery and materials required for working and transporting ores; that vessels entering in ballast and sailing with ore should pay a duty of 5 cents per ton navigation dues, and that vessels entering with cargo destined for the mining companies should pay \$1.30 per ton navigation and port dues on all such cargo, and on the remainder of the cargo as per general tariff. Under this charter the Juragua Iron Co. Ltd., an American corporation owned entirely in the United States, opened mines in Firmeza, built a railroad 20 miles long from that point to La Cruz, in Santiago bay, and in 1884, shipped the first cargo of iron ore from Cuba.

"The mines of this company were extensively and successfully worked, and, encouraged by this, in 1888 and 1889, two other American corporations, the Spanish-American Iron Co. and the Sigua Iron Co., purchased mines east of these of the Juragua company, and at once began developing them. The Spanish-American Iron Co., incorporated under the laws of West Virginia and owned entirely by American citizens, built a standard gauge railroad from its mines to Daiquiri Bay, about 16 miles east of the harbor of Santiago de Cuba. Here the company constructed a steel ore dock of 3,000 tons capacity, a landing pier, buoys, moorings and other improvements to the extent of \$500,000. The work of preparing this harbor delayed the opening of the mines for shipment, and it was not until May, 1895, that the first cargo was shipped. The Sigua Iron Co. built a standard gauge railroad nine miles long from its mines to Sigua Bay, and there constructed a breakwater and a wooden ore dock. In 1883-84 they shipped four cargoes, about 12,000 tons. Later these mines were closed and during the war between Spain and the Cubans the docks, shops, roundhouse, locomotives and buildings of the company at Sigua Bay were entirely destroyed in engagements between the Spanish and Cuban forces.

"The three iron companies mentioned represent an investment of American capital of about \$8,000,000, and the two still operating have paid into the treasury of the United States more than \$2,000,000 in import duties on iron ore. Ore outcrops on the side hills and mining is in the nature of quarrying.

"Under the present customs arrangements these companies are subject to an import duty on coal and indirectly to a tax on all vessels entering with it. The companies have protested against this tax on these grounds: 'Because the United States in occupying Cuba has respected existing charters, and the royal decree, already referred to, is, in effect, the charter under which these companies operate. Because these privileges were granted them in order to make the mining and shipment of the ore possible, and as the price of ore has fallen to less than 50 per cent. of what it formerly brought, in spite of the increased product and improved facilities, it is impossible for these companies to operate if their privileges and immunities are taken from them.'

COAL SHIPPERS.

The lake coal shippers from the Pittsburgh district held another meeting this week. All the operators were not

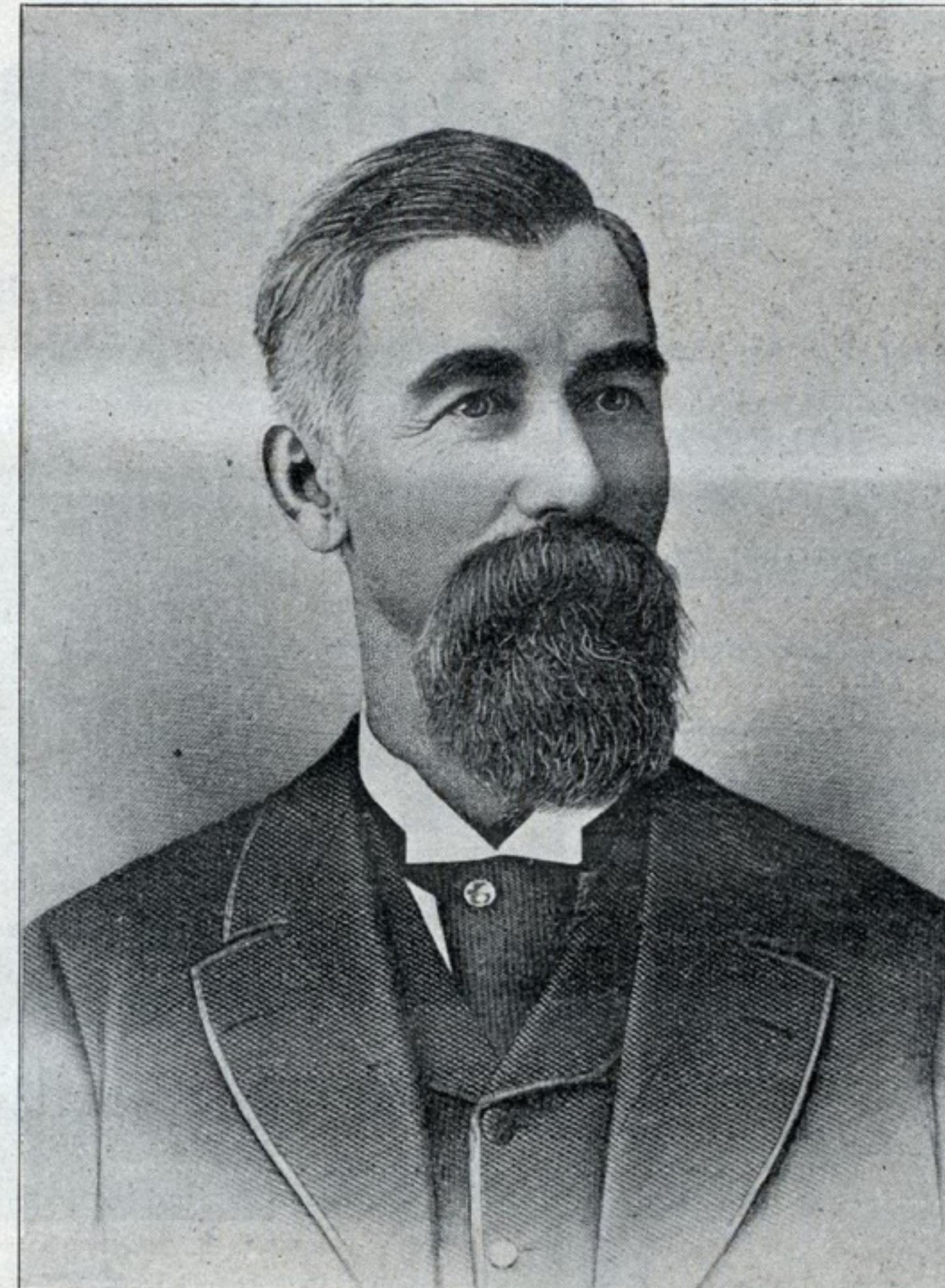
present, but it is understood that considerable work along the line of formulating a plan to regulate the trade was done and the prospects of the operators getting together on an agreement are brighter than they ever were.

Most of the parties interested have made some concessions in regard to tonnage, which has all along been the big drawback and many of the kinks have been smoothed out. Considerable work, however, is yet to be done and it will be a week or ten days before the matter is definitely settled. The operators are opposed to saying anything about the matter and no official statement will be made until it has been settled to form an agreement or drop the matter. No sales have been made and it is not likely that any great amount of business will be transacted in that line until the shippers reach an agreement or give up the plan. The shipping season is fully two months off and the operators will have plenty of time to complete their work before navigation opens.

CAPT. JAMES DAVIDSON.

One of the most unassuming men on the chain of lakes is Capt. James Davidson, yet he has seen service on the lakes, coast and ocean, and besides being a qualified lake pilot is also a deep water navigator.

Capt. Davidson is now the only builder of large wooden vessels on the lakes and owns a big fleet which he handles himself and does it in a manner to surprise some of the other owners who are continually after charters.



CAPT. JAMES DAVIDSON.

As a charter member of the Lake Carriers' Association in 1885, Capt. Davidson has done noble work for the lakes and the best interest of those connected therewith and is still one of the most energetic vessel owners which we have.

CHIEF INSPECTOR LIFE-SAVING SERVICE.

Capt. Chas. A. Abbey, of the Revenue Cutter Service, has been appointed Chief Inspector of the Life-Saving Service, with headquarters at 24 State street, New York. During the years from 1889-95, he filled the same position with credit to himself and the service in which he holds a commission. He has just completed the regulation tour of three years afloat, having commanded at different times auxiliary cruisers Woodbury and Gresham in the late war. Capt. Abbey, who is one of the seniors in his grade, has spent 28 years of his 34 years of service at sea. Notwithstanding his hard service, he has never been incapacitated for duty or on waiting orders, and has enjoyed but few leaves of absence. His reappointment as Chief Inspector of the Life-Saving Service is due to his general fitness for the position. He is the originator of several devices for saving life, adopted by the Life-Saving Bureau, among them being the well-known Abbey life-saving belt, and the Abbey boat launching car. He is a native of New York, and was appointed a lieutenant in the Revenue Cutter Service from that state in 1864.

KEEL LAID.

The anniversary of the blowing up of the battleship Maine in Havana harbor was marked by the beginning of work on the powerful man-of-war which will bear the name of the historic battleship, the destruction of which did much to precipitate the war with Spain.

The new Maine will be built by the Cramp's Ship Building Co., Philadelphia. The first piece of the keel of the vessel was laid on Wednesday. There was no formality in the proceedings, but the shipyard was thrown open to the public.

The Maine will be a sister ship to the Ohio and Missouri, the contract price of each being \$2,885,000. She is to have a speed of 18 knots, with a length on load waterline of 388 feet and a beam of 72 feet 2½ inches. She will have a normal displacement of 12,500 tons and a draught of 23 feet 6 inches. Her bunkers will be large enough to carry 2,000 tons of coal, and her complement of officers, seamen and marines will be about 600 men.

The Maine's armament will consist of four 12-inch breech-loading rifles, sixteen 6-inch rapid fire rifles, twenty 6-pounder and four 3-pounder guns and a few smaller pieces. The 12-inch guns will be of 40-caliber and of the new high-powered type, designed to use smokeless powder. With a muzzle velocity of 3,000 feet per second and firing an 850 pound shell, each gun will have an energy of 48,000 foot-pounds, equal to the penetration of four feet of solid iron at the muzzle. The builders will endeavor to have the new battleship ready for launching on Feb. 15, of next year, and to have her ready for service on the third anniversary of the sinking of the Maine in Havana harbor.

NEW YORK'S COAST LINE.

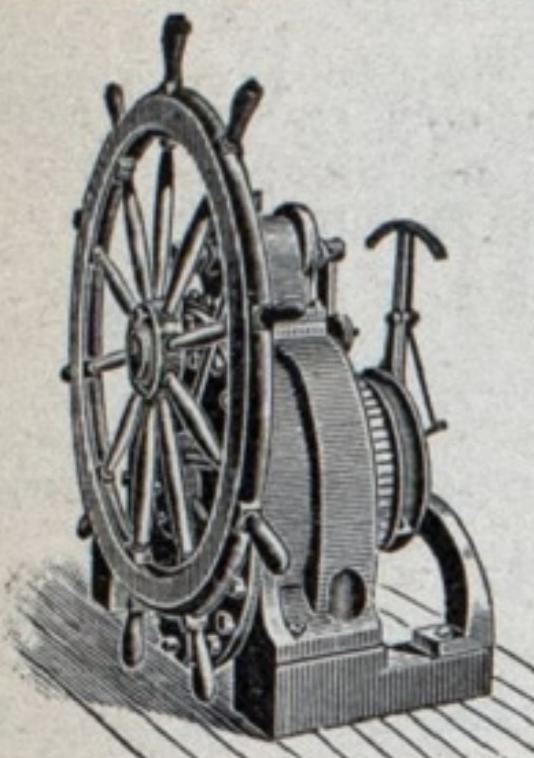
Greater New York has more water front than Venice, the city of canals. You would not have thought so, would you? Yet it is true. The approximate length of the coast line of Greater New York, just computed by the United States Coast and Geodetic Survey, Mr. A. Lindenohl, cartographer, is as follows:

LOCALITY.	STATUTE MILES.	TOTAL.
Borough of Queens.....	60	
Islands.....	35	95
Borough of Kings (Brooklyn).....	33	
Islands.....	43	76
Borough of Manhattan (New York).....	30	
Islands.....	9	39
Borough of Bronx.....	29.5	
Islands.....	16.5	46
Borough of Richmond (Staten Island).....	37	
Islands.....	2.5	39.5
Grand total.....		295.5

Among other features of the coast line are forty-five islands, forty-five summer resorts, forty-five electric buoys and light-houses, eclipsing the fabled Venice and all the other maritime cities of the world. Some of the coast line is as dangerous as any existing, and, all in all, New York has as many wrecks, collisions and accidents to its shipping as any other coast.

WHEN our resources are compared with those of the greatest shipbuilding country in the world, it is obvious that shipbuilding must come within the law. We have the materials as conveniently situated, more abundant, of superior quality, and to do the work labor which is more intelligent and more effective. If it is policy for us to make cloth, glass or steel rails, it certainly is policy for us to build ships, for our facilities to manufacture any of these things are in nothing superior to our adaptability to iron shipbuilding. To build a respectable merchant marine now would probably involve an investment of at least half a billion of dollars in ships, of which \$450,000,000 must go to labor. The American policy demands that that money shall be spent at home, to rejuvenate the countless American industries connected with shipbuilding, from the grocery store and blacksmith shop near the mine, to the God-gifted artist who brings order and beauty out of the formless chaos of the raw materials in the shipyard. It will cost more to build an American iron steamship than to buy it on the Clyde, because American labor is better paid, better fed and better clothed; and because of the advantage over his competitor which the Clyde shipbuilder has had from his long experience. But the same was true of manufacturers of all kinds, when the founders of the American system in the first Congress determined that factories should be started here. The building of a ship involves the exercise of the highest kind of mechanical skill, and experience has proven that it is in such an industry that American inventive genius soonest surmounts the extra cost of domestic production by labor saving devices and the exercise of intelligence.

Queen City Patent Hydraulic Steerer.



The best and most reliable.
Generates no heat in pilot house.
Has large hand wheel.
Can be changed from power to hand steering instantly.
A favorite with pilots.

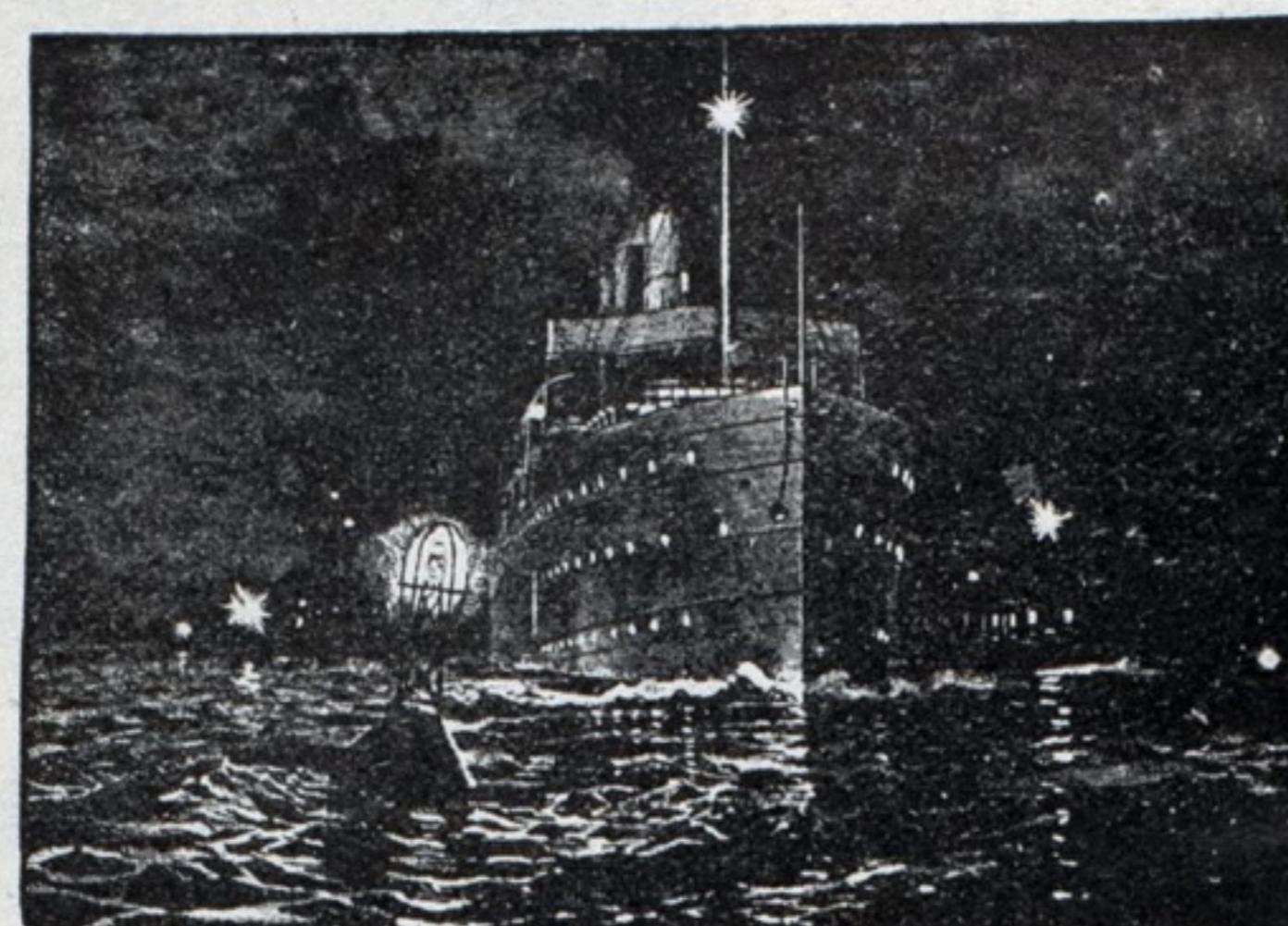
Send for References.

Queen City Engineering Co.

BUFFALO, N. Y.

Pintsch Gas Lighted Buoys.

Adopted by the English, German, French, Russian, Italian, and United States Light-House Departments for channel and harbor lighting. Over 800 gas buoys and gas beacons in service.



Burn Continuously

from 80 to 365 days and nights without attention, and can be seen a distance of six miles.

Controlled by

THE SAFETY CAR HEATING
AND LIGHTING CO.

160 Broadway, New York City.



The Best Union
Made in the U. S.
Mnf'd by the
E. M. Dart Mfg. Co.
Providence, R. I.
Send for circulars and prices.

Almy's Patent Sectional WATER TUBE BOILERS.

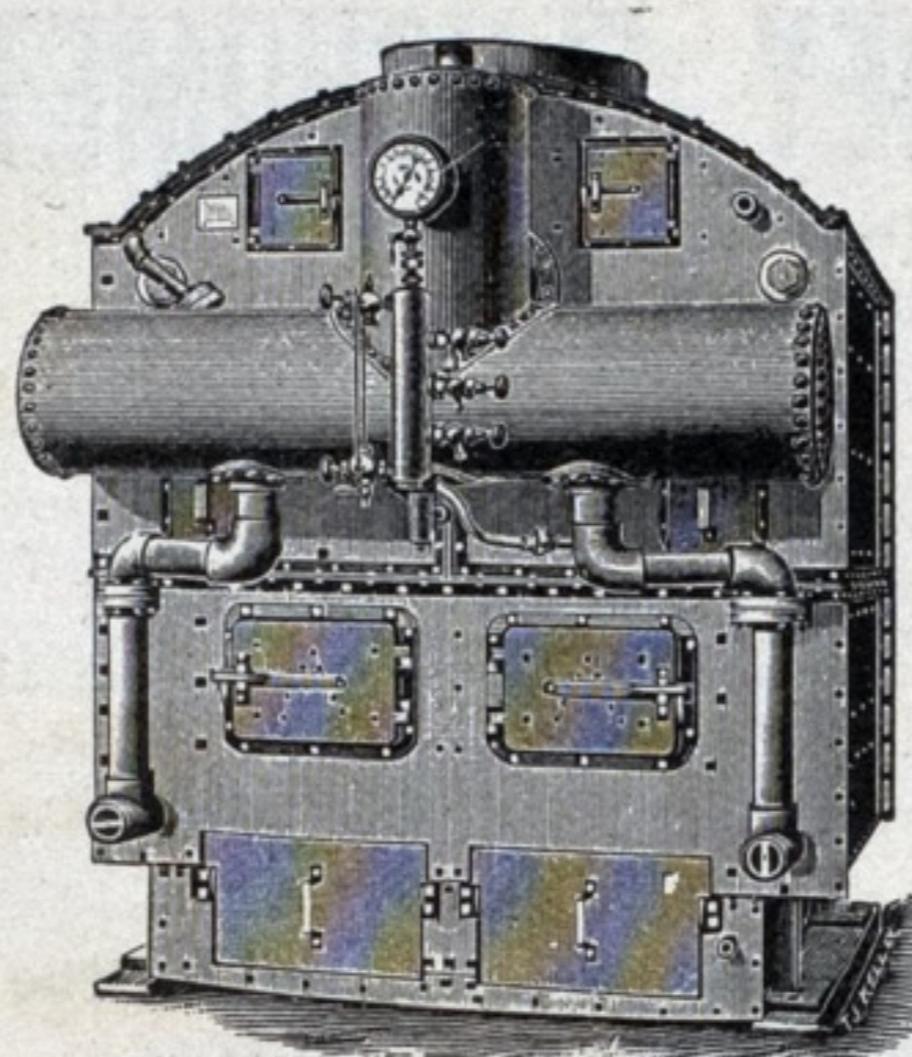
NOW USED IN

21 Passenger Boats from 70 to 160 ft. long.
61 Steam Yachts from 50 to 180 ft. long.

U. S. TORPEDO BOAT "STILETTO."

Numerous freight and fishing steamers, launches and stationary boilers are giving most excellent results.

ALMY WATER TUBE BOILER CO.,
178-184 Allens Ave., near Rhodes St., PROVIDENCE, R. I.



MARITIME LAW.

THE E. V. McCaulley—THE IVANHOE.

(Circuit Court of Appeals, Third Circuit, December 2, 1898.)

TOWAGE—LOSS OF TOW—NEGLIGENCE OF TUG—RELIANCE ON WEATHER SIGNALS.—The captains of tugs who remained in harbor with their tow during a storm lasting several days were not negligent in relying on the government weather signals, and putting to sea after the storm had abated and the signals had been changed to indicate fair weather and favorable winds, merely because the wind had "backed around" from the northeast to west of north.

SAME—INSUFFICIENCY OF HAWSER.

Tugs engaged in towing a dock at sea cannot be held liable for its loss during a storm, on the ground of the insufficient strength of the hawser used, where it appears the loss is in no way attributable thereto.

Appeal from the District Court of the United States for the Eastern District of Pennsylvania.

This was a libel by Rilatt Bros. against the tugs E. V. McCaulley and Ivanhoe for the loss of a tow. The district court dismissed the libel (84 Fed. 500), and the libelants appealed.

Before Acheson and Dallas, Circuit Judges and Kirkpatrick, District Judge.

Kirkpatrick, District Judge. The tugboats E. V. McCaulley and Ivanhoe were employed to tow a dock belonging to the libelants from the port of New York to Philadelphia. The dock was to be prepared for the voyage by the owners, and when ready the tugs were to furnish the necessary hawser for the towing, and start upon the voyage at the first favorable opportunity. The tugs reached New York on Monday, October 28th. On the following day an easterly storm set in, which continued until early Friday morning, when the weather cleared and the wind went to the northwest. About 11 o'clock Friday morning the tugs started with the dock in tow, and on Saturday, about 10 o'clock in the morning, when off Barnegat light, the dock was lost in a storm. The charge of the libelants is that the tugs are responsible for the loss, because it was entirely due to their carelessness or negligent conduct. Three charges of negligence are urged upon our consideration—the first relates to the commencement of the voyage, the second to its continuance, and the third to the improper means employed to do the towing.

As to the first charge, the libelants say that the tugs were guilty of negligence in taking the dock outside of the shelter of Sandy Hook when they did, because the indications at that time were that the weather was not "settled," and a recurrence of the storm was probable before the tow could reach its destination. In support of this allegation they

offer the testimony of Mr. Griffin, who says that the wind on Friday morning "backed around" from northeast to northwest, and cite the case of The Vandercook, 65 Fed. 251, as an authority to establish the rule that this is an indication of the temporary nature of good weather. True it is that the court did say that, from the evidence produced in that case, it appeared "that when the wind backs from the northeast to westward of north it is likely to return to the eastward before many hours," but the Vandercook was held to be in fault, not from this circumstance alone, but, because, before the start had been made, the wind was blowing from the eastward, and because other captains similarly situated with tugs did not consider it a prudent thing to do. The evidence in the case at bar is that on Friday morning, when the tugs started with the dock, the weather had cleared, the sea was smooth, and the wind was blowing gently from the northeast. When the tugs and dock reached Sandy Hook, between 2 and 3 o'clock Friday afternoon, it was observed that the government weather signals had been changed; those predicting fair weather and winds favorable for vessels to leave port having been substituted for those telling of the probable continuance of the storm. Many vessels which had sought shelter in Princess Bay had proceeded or were proceeding upon their voyages, because, as the masters who were called as witnesses testified, they believed the storm had spent itself. Under these circumstances, we do not feel justified in finding the tugs guilty of carelessness, even though it be a fact that the wind "backed around" by the northward. The captains of the tugs had no interest in putting to sea in the face of a storm. They, no doubt, would have preferred a safe anchorage in the bay to the risk of encountering an easterly storm off the notoriously dangerous New Jersey coast. They may be presumed to have exercised their best judgment, which, when fortified by that of others in the like situation and confirmed by the predictions of those whom the government employs to gather information and give to seamen the benefit of their experience, is sufficient to relieve them from the charge of negligence. It is urged that the predictions of the government officials of the weather bureau are not to be relied upon; that they are so frequently incorrect as to make them the laughing stock of the observant and the weatherwise. It may be that a predicted storm may be dissipated before reaching its apparent destination, or that one may unannounced come from a quarter where stations of information are few or absolutely wanting, but nevertheless we are of the opinion that these reports furnish the most trustworthy information attainable, and that those relying upon them should not be considered

negligent or careless, as might be those who suffered injury despite these warnings.

The second charge of negligence is that the tugs should have "put back" and not proceeded upon the voyage, when at sunset the indications were that a storm was threatening. The evidence fails to substantiate the allegation that at that time there were any such indications. It is denied by all the witnesses whose duty it was to observe the signs of the weather and by all the others called in the case, except Mr. Griffin, who says merely that the sunset "was not a good one." All the others say, that at sunset there were no signs of storm, and that it was clear, the wind light and from the westward, the sea smooth, and that there was no reason to believe that the favorable weather would not continue until they reached the Capes. It was not until about 3 o'clock in the morning of Saturday when off Barnegat, that the wind shifted to the eastward, and the sea, in consequence, began to rise. It was then too late to turn back. They were 12 hours from Sandy Hook, and it would have required twice that time to have returned against the rising head wind. They were then obliged to keep on their course. The only time a return was practicable was at sunset, and it was not then apparently necessary or advisable.

The third charge is that the tugs were negligent in not furnishing a proper hawser for the towing. Various witnesses have been called to testify respecting its sufficiency. It seems to us, however, that the unanswerable reply to libelants' contention of unfitness is that they have not shown that the loss of the dock was in any way attributable to the weakness of the hawser. Long before the hawser parted it was apparent that the dock could not withstand the violence of the gale. Griffin, the libelants' employee, testified that at daylight he believed that the dock was doomed to destruction. He was on the dock, and in a position to know its condition. The sides were swaying to and fro, and the sea was sweeping through it from end to end. So dangerous did he regard the situation that he was unwilling to remain longer on the dock. He signaled the tugs to come to his assistance, and, when it was found that the tug could not approach the dock on account of the violence of the waves, Griffin seized a rope thrown to him from the tug, lashed it around his body, and cast himself into the sea, preferring to take that desperate risk rather than remain upon the sinking dock. The hawser held for some time after Griffin left the dock, and until about half past 8 in the morning, when, by a sudden strain caused by the surging of the vessel, it parted at the bitts of the tug. The same high seas which rendered it impossible for the tugs to approach the dock to effect

Griffin's rescue prevented them from recovering the tow, and soon afterward the dock was broken to pieces by the waves and sunk. A careful consideration of the evidence satisfies us that the fate of the dock would have been the same had the hawser held until it would have been necessary to cut it to prevent the tug from following the dock to the bottom of the sea.

Upon the whole case, we fail to find that any of the charges of negligence are sustained by the proofs, and we are of the opinion that the decree of the district court should be affirmed.

NOTES.

A HEARING was given in U.S. District Court yesterday on a libel brought by H. M. Sargent et al., owners of fishing schooner Ella Doughty (of Portland) vs steamship Columbian, to recover \$3,500 damages for injury to libelants' schooner Aug. 30, 1898. They allege the collision was due to fault of the steamer going at too great speed. Libellee answers that the collision occurred on a foggy night, and was entirely due to carelessness of those in charge of the schooner and to the fact that it did not display proper lights.

A DECISION has been given by the court of appeals of Boston in reversal decision of the trial court in the case of the Phoenix Insurance Company vs. the brig Emily T. Sheldon, to the effect that the master of a vessel is not liable for acts while insane from exposure. It has been shown that the captain of the vessel was for three days and nights on duty without rest and had been obliged to dose himself heavily with quinine also, but the lower courts, nevertheless, held that the vessel was lost through his negligence, carelessness, misconduct and improper navigation. This contention, the appeal court held, was unreasonable and abhorrent to all principles of equity and justice.

FOR several weeks past the river below Niagara Falls has been thickly frozen over and the mass of ice has been gradually accumulating until at some points, last week, it measured 30 to 90 ft. in thickness. On January 22 the high water in the river, occasioned by the wind blowing off Lake Erie, tore the bridge loose, and it floated down the river some distance and finally became jammed in under the new suspension steel arch bridge, where it remains a menace to the safety of the structure. The crowding of floating ice against the shore has piled a huge mass of ice against and over the masonry abutments of the bridge, burying them to a depth of 50 ft., and bending slightly some of the lower girders of the arch. The bridge men resorted to blasting in order to clear the ice from about the abutments and an opening of considerable size has been made around each. As the mass of ice is constantly accumulating, however, much concern is felt for the bridge.

TOBIN BRONZE

(Trade-Mark Registered.)

Tensile strength of plates one-quarter inch thick, upward of 78,000 lbs. per square inch. Torsional strength equal to the best machinery steel. Non-corrosive in sea water. Can be forged at cherry red heat. Round, Square and Hexagon Bars for Bolt Forgings, Pump Piston Rods, Yacht Shaftings, etc. Rolled Sheets and Plates for Pump Linings and Condenser Tube Sheets, Centerboards, Fin Keels and Rudders.

S.F. HODGE & CO.

MARINE ENGINES,
PROPELLER WHEELS,
DECK HOISTERS,
MARINE REPAIRS.
312 ATWATER STREET,
DETROIT, MICH.

Chas. E. & W. F. Peck,

58 William Street, New York City.

Royal Insurance Building, Chicago, Ill.

C. T. BOWRING & CO.

5 and 6 Billiter Avenue, E. C., - London, England.



Insurance

BROWN & CO., - - - 202 Main Street, Buffalo, N. Y.
PARKER & MILLEN, 15 Atwater Street, W., Detroit, Mich.
J. G. KEITH & CO., - 138 Rialto Building, Chicago, Ill.
LA SALLE & CO., Board of Trade Building, Duluth, Minn.

Are prepared to make rates on all classes of Marine Insurance on the Great Lakes, both CARGOES AND HULLS.

SAINT VALENTINE IN CANADA.

Under the cedars and over the snows
With soft still leaps the white hare goes,
Till every friend has heard his call
To a wildwood lovers' festival:
"Come, hunted ones, and hearts be light,
No hunter's abroad on Valentine's night.

With bark and berry the feast is made,
With dainty that ripens in cedar shade,
With wine of the woods, the mountain breeze
Blown through pungent balsam trees.
There's chirp of squirrel and shy wood-mouse,
The red deer snorts, there's drum of grouse,
And when the moose bull bellows shrill
Their chorus goes from swamp to hill:

Till Jeane and Pierre—whose love-talk low
Made fair a poor hut in the snow—
Listen, and thinking of forest elves,
Draw yet closer, and cross themselves.

—Harper's Weekly.

SHIPPING AND MARINE JUDICIAL DECISIONS.

Master and Servant—Negligence.—The question of the master's negligence was for the jury where a servant, wheeling a truck on a steamer, was injured by the tipping up of a bunker-hole cover over which he had to pass, and which if properly in place could not have been displaced. Cheevers vs. Ocean S. S. Co. of Savannah, 55 N. Y. Supp. 445.

Grants of Land Under Water.—Where land under water is conveyed by the state to the owner of the adjacent uplands, it becomes appurtenant to the uplands, and will pass by a conveyance of the latter without specific description. Archibald vs. New York Cent. & H. R. R. Co., 52 N. E. Rep. (N. Y.) 567.

Loss of Vessel—Temporary Insanity of Master.—It is a good defense to an action against a master for the negligent destruction of a vessel that his want of care was due to temporary insanity, resulting from exhaustion caused by his efforts to save it. Williams vs. Hays, 52 N. E. Rep. (N. Y.) 589.

Negligence of Officers.—The captain of a brig, after working 48 hours to save it from a storm, became exhausted, and, after taking 15 grains of quinine, fell asleep in the cabin. The vessel refusing to mind her helm, the captain was awakened with difficulty, and was informed by a passing tug that the vessel's rudderpost was split. The tug offered to tow the brig to port, but the captain declined. One of the crew was let down from the stern, examined the post, and informed the captain that it was split; but he made irresponsible answers, and appeared in a dazed condition, and, to be either drunk or insane. Another tug passed, and offered to tow the vessel but was also declined. During this time the mate was on deck, obeying the captain's orders. The brig became unmanageable, drifted from the beach, and was destroyed. The captain testified that he remembered nothing that occurred on that day. Held, that whether the captain's condition was so apparent as to charge the mate with negligence in not forcibly taking charge of the vessel, was for the jury. Williams vs. Hays, 52 N. E. Rep. (N. Y.) 589.

Maritime Liens.—Where the record shows that the owner was the father of two libelants, and the friend and intimate of another, and that he maintained malicious feeling toward mortgagees of the vessel, and he had given a bond not to involve the vessel in debt, while the mortgage continued, beyond \$300 and there is no evidence to satisfy the court as to the bona fides of the three claims, and remove the suspicion of a family conspiracy to concoct claims which would prejudice the mortgagee, the bond being worthless, the claims must be disallowed. The Penokee, 90 Fed. Rep. 825.

Maritime Liens—Bona Fide Purchasers.—The question as to what length or delay in proceeding to enforce a maritime lien will constitute laches and bar relief against a bona fide purchaser of the vessel is always one of fact to be determined in view of the particular facts in each case. The Tiger, Fed. Rep. 826.

Maritime Liens—Facts Considered.—Where a libel to enforce a lien for work against a steam tug was not filed until 17 months after the work was performed, during 10 months of which time the tug had been out of commission, and lying in the harbor of the city where the libellant resided, such delay constituted laches which barred the libellant of relief as against an owner who purchased the tug a few days before the libel was filed, without knowledge of the claim, and knowing that the vessel had been out of service for many months, and who made inquiry of the seller as to liens before the purchase. The Tiger, 90 Fed. Rep. 826.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo	2,026,000	74,000	115,000	27,000	808,000
Chicago.....	4,034,000	9,925,000	1,477,000	453,000	793,000
Detroit	305,000	474,000	3,000	10,000	66,000
Duluth and Superior	5,990,000	3,325,000	1,052,000	213,000	358,000
Milwaukee.....	24,000	.....	5,000	2,000	88,000
Montreal	19,000	19,000	205,000	4,000	9,000
Oswego .....	.....	119,000	.....	.....	80,000
Toledo	487,000	989,000	59,000	3,000	.....
Toronto	107,000	.....	10,000	.....	28,000
Grand Total.....	30,161,000	30,624,000	7,115,000	1,587,000	2,922,000
Corresponding Date.	35,634,000	38,572,000	14,012,000	3,948,000	2,668,000
Increase.....	1,177,000	2,416,000	77,000	20,000	.....
Decrease .....	.....	.....	.....	.....	289,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

THE number of vessels flying the Hawaiian flag, and which may be admitted by Congress to American registry, is 61, with a total tonnage of 33,786 tons. They are classified as follows: Steamers 15, tonnage 15,888; ships 3, tonnage 6,272; barks 9, tonnage 9,020; schooners 18, tonnage 2,578; sloops 3, tonnage 25. Of this number 40 are engaged in the coasting trade. Twenty of the fleet were built in British shipyards.

The Ansonia Brass & Copper Co.

SOLE MANUFACTURERS,

Send for Pamphlet.

19-21 Cliff St., NEW YORK.

58 William Street, New York City.

Royal Insurance Building, Chicago, Ill.

C. T. BOWRING & CO.

5 and 6 Billiter Avenue, E. C., - London, England.



INCORPORATED 1794.

Insurance Company of North America

CAPITAL, Paid up in Cash,
ASSETS, - - - - -

\$3,000,000.00

- - - - - 10,173,488.90

CHARLES PLATT, President.
GREVILLE E. FRYER, Sec'y and Treas.
T. HOUARD WRIGHT, Marine Secretary.

EUGENE L. ELLISON, Vice President.
BENJAMIN RUSH, Second Vice President.
JOHN H. ATWOOD, Assistant Secretary.

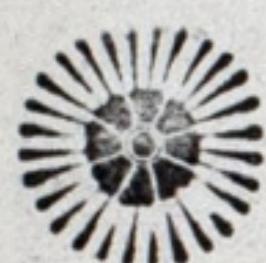
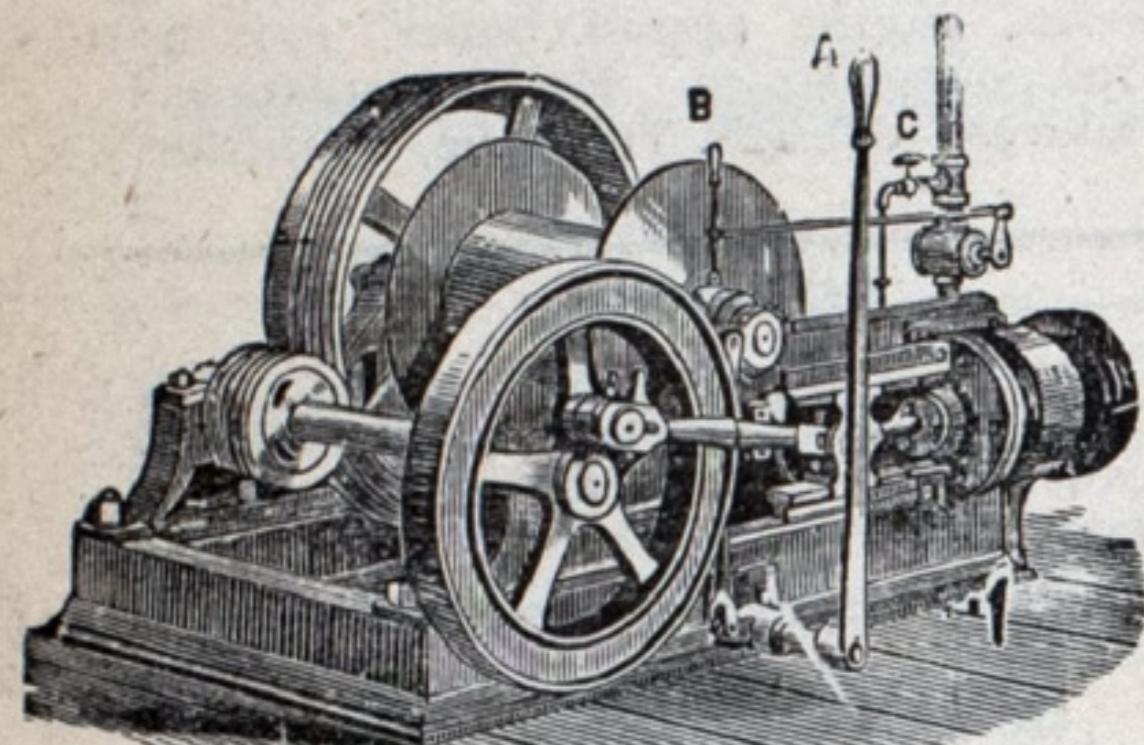
Lake Marine Department,

GEORGE L. McCURDY, MANAGER.
CHICAGO, ILL.



WILLIAMSON BROS.

COR. RICHMOND AND YORK STS.,
Philadelphia, Pa.

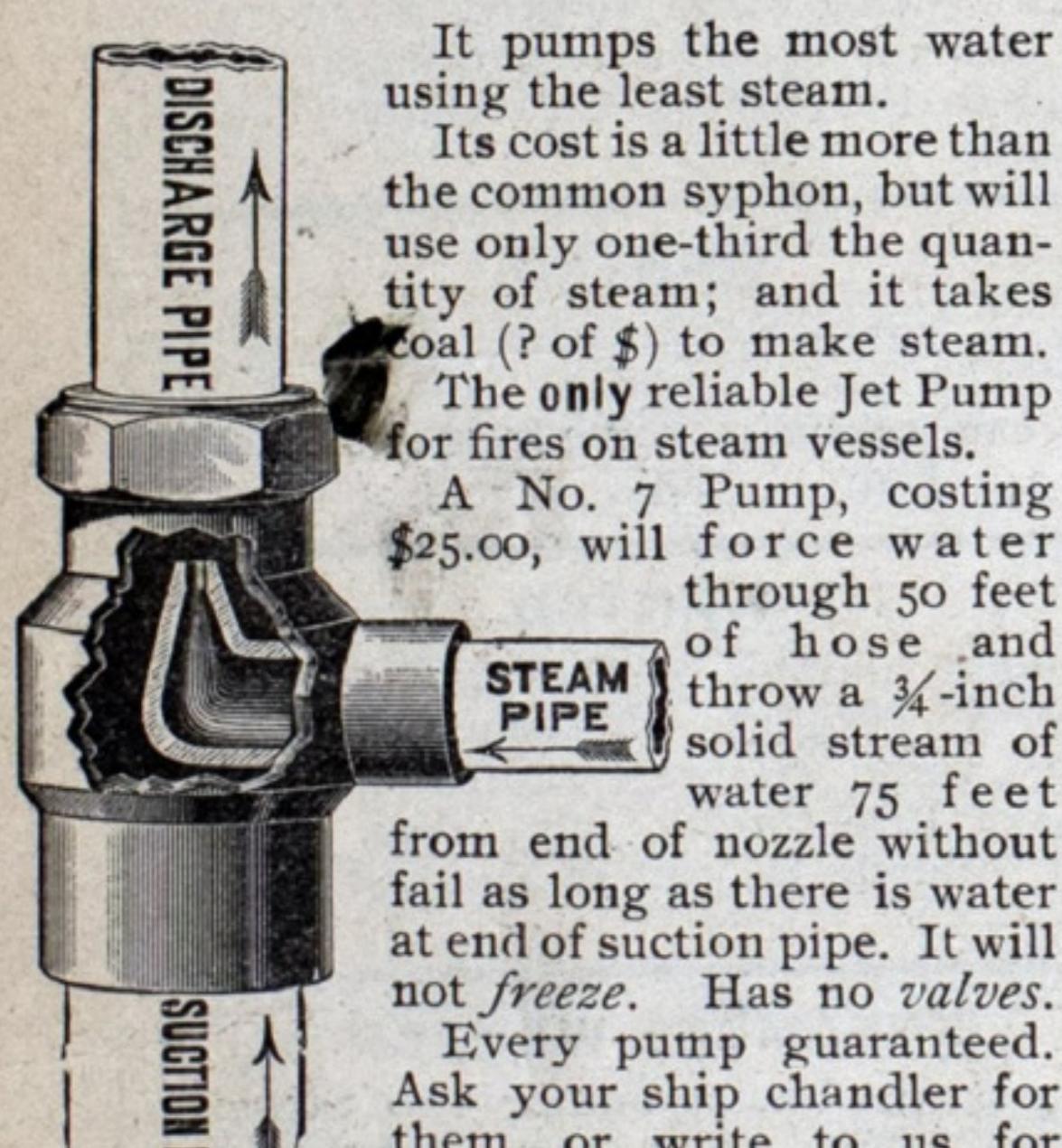


HOISTING and SHIP ENGINES
STEERING ENGINES.

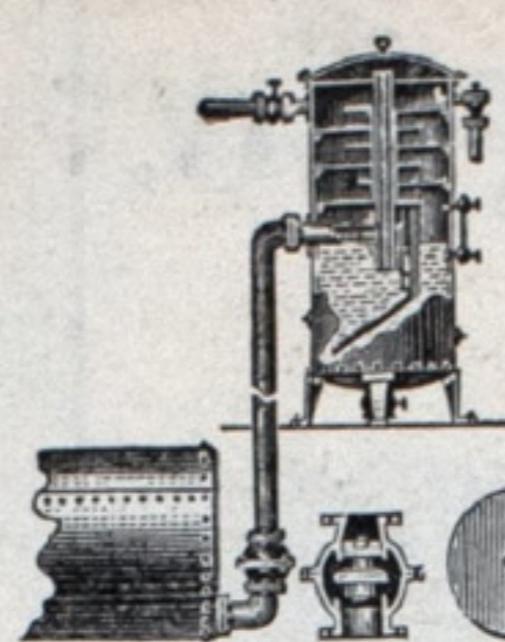
With either Fractional, Spur or Worm Gear of
Various Patterns to Suit all Purposes.

Use the Vanduzen PUMP

THE BEST STEAM JET PUMP IN THE WORLD.



THE E. W. VANDUZEN CO., CINCINNATI, O.



Buffalo Feed Water Heater AND PURIFIER.

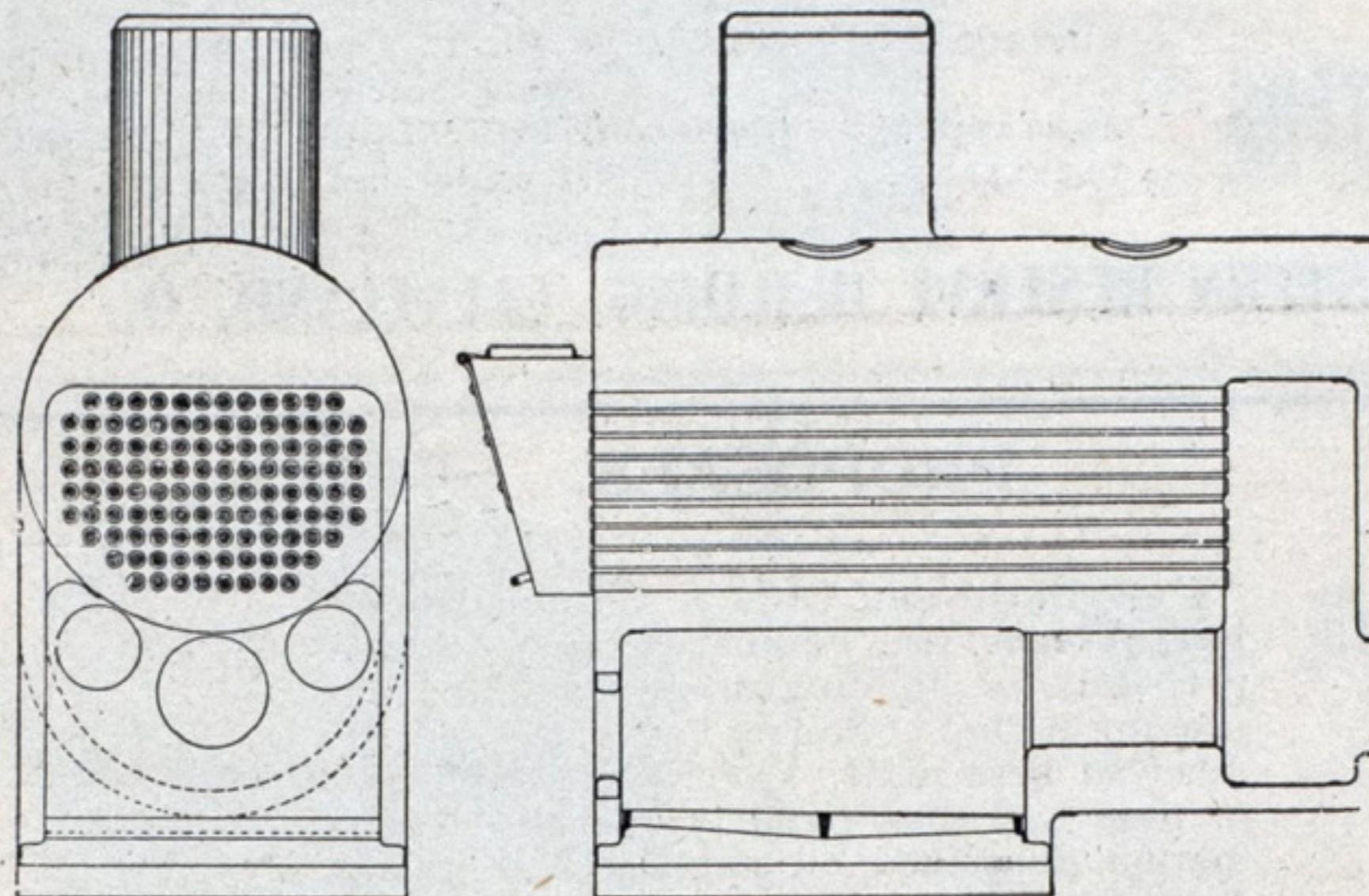
Made in all Sizes and to Suit all Conditions.

ROBERT LEARMONT, 200 Bouck Ave., BUFFALO, N. Y.

Send for Catalogue.

THE "ECLIPSE" Marine Boiler

PATENTED.



Built by Kingsford Foundry and Machine Works,
OSWEGO, N. Y.

They are economical and occupy but little space.

They give perfect satisfaction.

They are easily kept clean, and the crown sheet being cylindrical in form requires no bracing.

SEND FOR DESCRIPTIVE CIRCULAR.

Paddle Wheel Machinery

Our knowledge of river navigation is earned through long experience and exceptional opportunity. We design and build the entire and complete outfit of driving machinery for powerful light draft vessels, having the best of modern shop facilities to aid us in doing all the work. Write to us before you act.

MARINE IRON WORKS

Station A. CHICAGO.

Compasses Adjusted

For deviation, and deviation tables supplied. Great facilities for doing the work by day or night.

John Maurice.

Office, 24-26 Market St., CHICAGO.

WM. WILFORD'S

Matchless Waterproof Cloth
and Societe Anonyme De Veluwe,
(Japan Paint).

EDWARD A. BUNKER,
Sole Agent,
20 Broad Street, New York City.

The Cuddy-Mullen Coal Co.

Miners and Shippers of STEAM COAL

FUELING DEPARTMENT FACILITIES.

CLEVELAND HARBOR.—Car Dumper; Eight Pockets, 1000 Tons Capacity; Lighter Steam Derricks.

DETROIT RIVER BRANCH.—Amherstburg; Four Pockets; Three Steam Derricks
SANDWICH—Fourteen Pockets and Two Steam Derricks.

"SOO" RIVER BRANCH.—Two Docks, (Formerly known as the Anthony and Watson Docks,) Equipped with Pockets and Steam Derricks.

GOOD COAL.

COURTEOUS ATTENTION

QUICK DISPATCH.

General Offices, Perry-Payne Bldg., Cleveland, O.

Youghiogheny River Coal Co.

Miner and Shipper of

OCEAN,
YOUGHIOGHENY
GAS AND STEAM

COAL.

General Office:
Erie, Pa. Long Distance 'Phone 409.

Shipping Docks:
Ashtabula, O. Long Distance 'Phone 76.

VESSELS FUELED AT ALL HOURS

ELECTRIC LIGHT.

WITH OCTAN COAL ONLY,
BY STEAM LIGHTER OR CAR DUMP.

THE W. L. SCOTT COMPANY,

ERIE, PA.

WHOLESALE DEALER IN

Shamokin, Wilkesbarre Anthracite,
Youghiogheny, Mansfield, Pittsburg

Vessel Fueling a Specialty

by steam lighter or car dump,
at all hours. Electric light.

MAIN OFFICE: SCOTT BLOCK. LONG DISTANCE 'PHONE 440.

FUELING OFFICE: CANAL DOCK. LONG DISTANCE 'PHONE 320.

...Coals

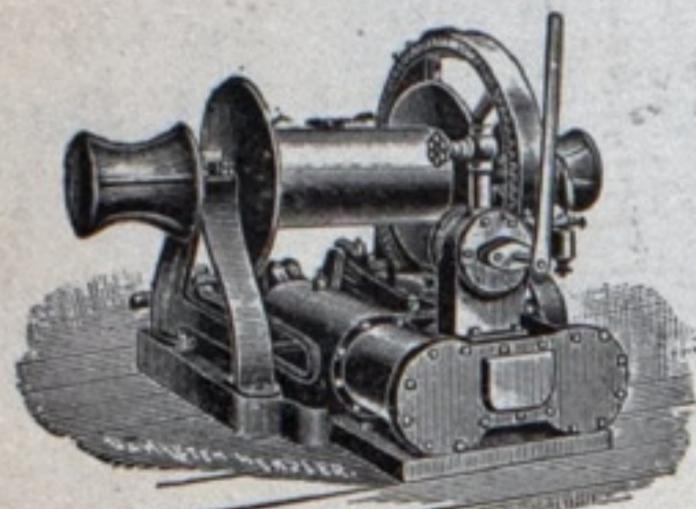
THE CHASE MACHINE COMPANY, ENGINEERS AND MACHINISTS.

MANUFACTURERS, UNDER THE CHASE PATENTS, OF
Fog Whistle Machines, Hoisting Engines, Steering Engines Automatic Towing Engines,
Power and Drop Hammers, and other Machinery. Engineers' Supplies and General Jobbing.

111 ELM STREET.

TELEPHONE, MAIN 994.

CLEVELAND, O.



Dock and Deck Hoists

ALL KINDS OF
Machinery and Friction Hoists.

Send for Prices
and Circulars.

JACKSON & CHURCH,
Saginaw, Mich.

John E. Thropp & Sons' Co.

BUILDERS OF

Compound and Triple Expansion

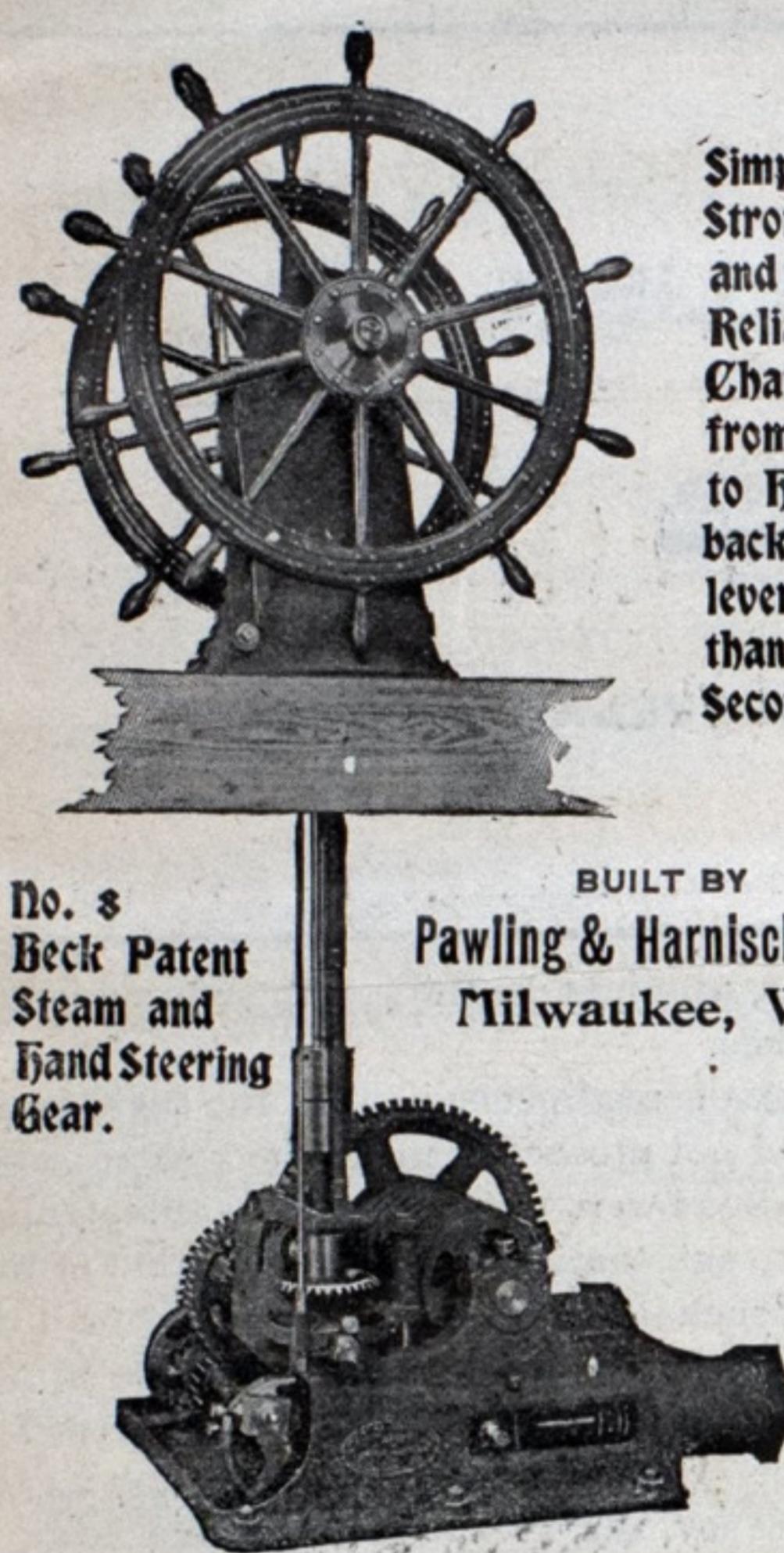
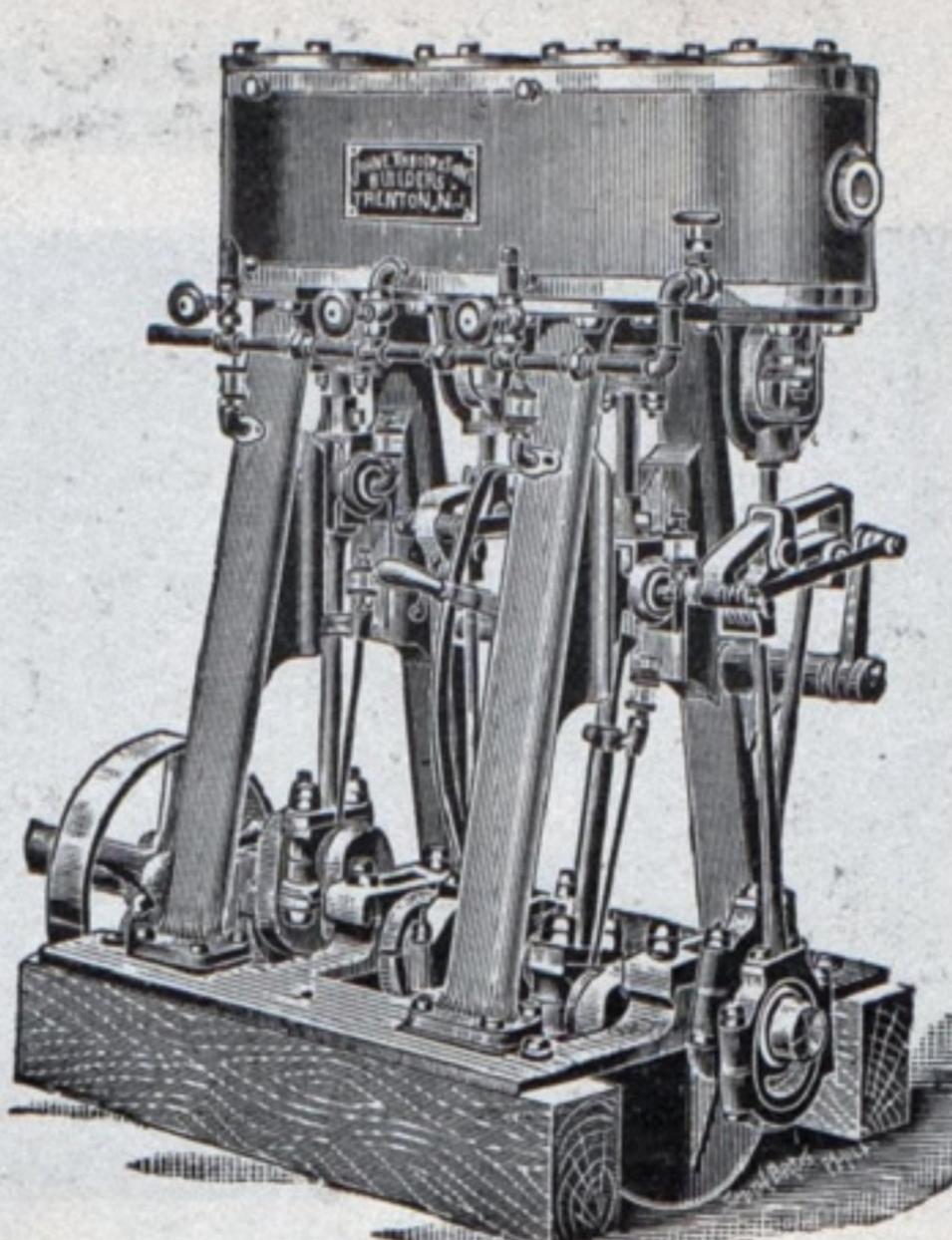
ENGINES,

Boilers, Surface Condensers, Propeller
Wheels, Etc.

Contracts taken for yachts and tugs
complete. Send for photographs of En-
gines and descriptive pamphlet.

Works on Delaware & Raritan Canal Basin.

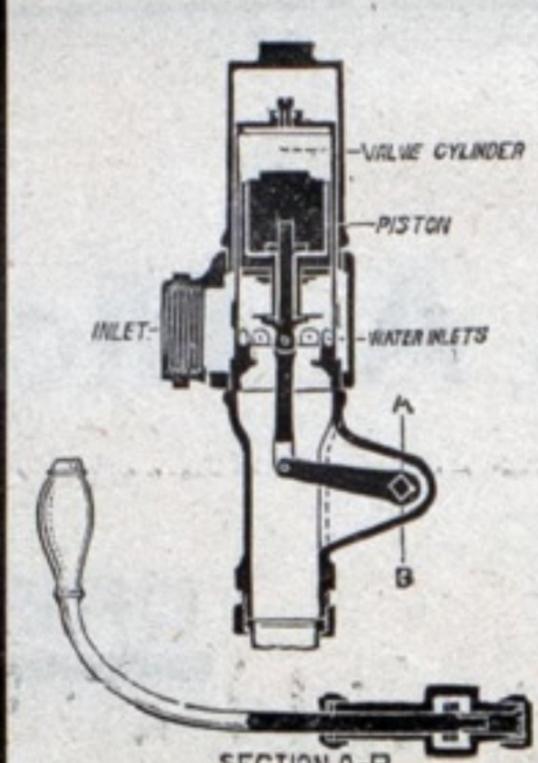
TRENTON, N. J.



No. 8
Beck Patent
Steam and
Hand Steering
Gear.

BUILT BY
Pawling & Harnischfeger,
Milwaukee, Wis.

Simplest,
Strongest
and most
Reliable.
Changed
from Steam
to Hand or
back by one
lever in less
than one
Second.



THE KENNEY FLUSHOMETER FOR FLUSHING WATER CLOSETS.

Takes the place of the noisy and dirty overhead
flush tank, and is

THE BEST SYSTEM EVER INVENTED FOR USE ON STEAM VESSELS.

Owners and constructors of Steamships, Yachts and
Steamboats have found it indispensable. Used by the U. S. War
and Navy Departments. Transport Mohawk, U. S. Cruiser Detroit,
U. S. Gunboat Amphitrite. Also Albany Day Line Steamers and
others.

THE KENNEY FLUSHOMETER is patented and manufactured only by The Kenney
Co., who guarantee the successful operation of the system.

SEND FOR
ILLUSTRATED PAMPHLET.

THE KENNEY COMPANY,

72 to 74 Trinity Place, NEW YORK.

DONNELLY CONTRACTING CO.

896 ELLICOTT SQUARE,

BUFFALO, N. Y.

CONTRACTORS AND CONSULTING ENGINEERS,
HARBOR AND CANAL WORKS, ETC.

WANTED, A PROPELLER,

arranged for carrying package freight, of
about 1200 to 1400 tons capacity, with good
boiler and machinery. Must not rate below
A 1½. Will only deal direct with owners.
Give full description and state lowest cash
price. Address,

P. O. BOX 951, CHICAGO.

WHEN GOING FROM CLEVELAND TO NEW YORK,

take train No. 10 via the Erie R. R. Pull-
man Drawing Room and State Room Cars,
combined Dining and Cafe Car (meals a la
carte). No train is more deservedly popular
than this one.

NEVERSINK CORK JACKET AND LIFE BELT.

Warranted 24 lb. Buoyancy and full Weight of Cork, as required by U. S. Inspectors. Consolidated Cork
Life Preservers. Superior to all others. Rings Buoys and Fenders. SAFEST CHEAPEST.

Approved and adopted by U. S. Board of Supervising Inspectors.

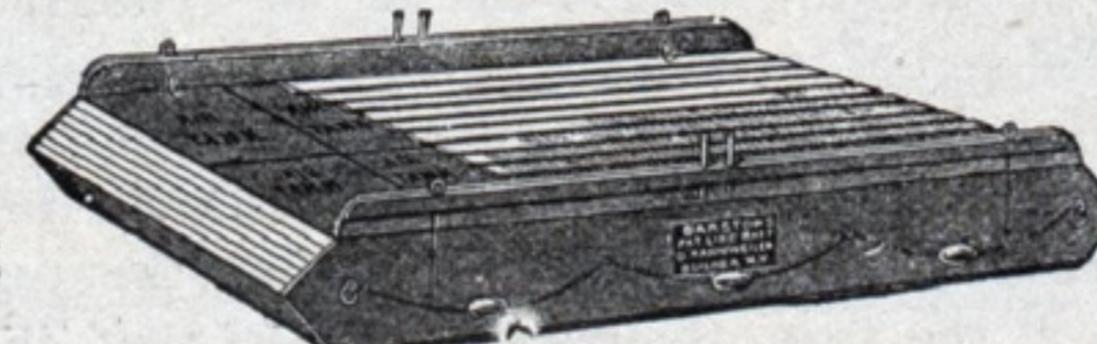
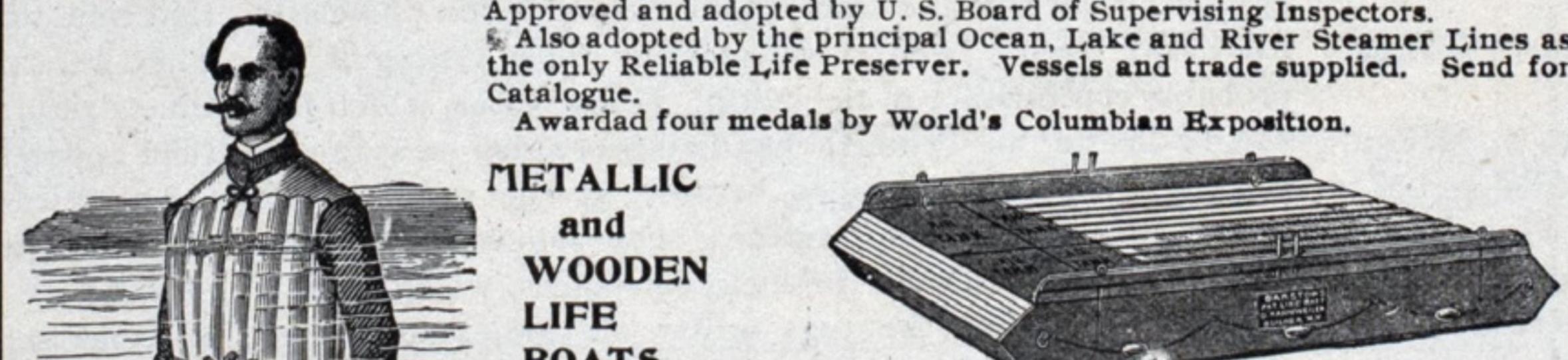
Also adopted by the principal Ocean, Lake and River Steamer Lines as
the only Reliable Life Preserver. Vessels and trade supplied. Send for
Catalogue.

Awarded four medals by World's Columbian Exposition.

METALLIC

and

WOODEN
LIFE
BOATS.



Metallic Life Rafts, Marine Drags.

Manufacturer of Woolsey's Patent Life Buoy, which is the lightest,
cheapest and most compact Life Raft known. Send for illustrated cata-
logue. Get our prices before buying elsewhere.

D. KAHNWEILER, 437 Pearl St., New York City.

SHERIFFS MFG. CO.

ESTABLISHED 1854.



MILWAUKEE, WIS.



For Stationary, Portable,
Traction Engines, Tugboats, &c.
Thoroughly Reliable—Perfectly Automatic.
JENKINS BROS., - Selling Agents,
NEW YORK, BOSTON, PHILA., CHICAGO.



Steamboat Fuel at Chicago.

YOUGHIOGHENY and
LEHIGH COAL CO.

J. T. CONNERY, Manager. ARCHIE J. HITCHCOCK, Dock Supt.
MAIN OFFICE: 1238-1242 Chicago Stock Exchange Building.
Long Distance Telephone, Main 5049. 110 LA SALLE STREET.

FUEL DOCKS: No. 1, Michigan Slip and Basin. Phone 3046, Main.
No. 2, N. Halstead St. Bridge. Phone 773, North.
FUEL LIGHTER: Equipped with 125 2-ton Buckets for
Fueling anywhere in Harbor.

WE PRODUCE OUR YOUGHIOGHENY COAL, AND GUARANTEE QUALITY.



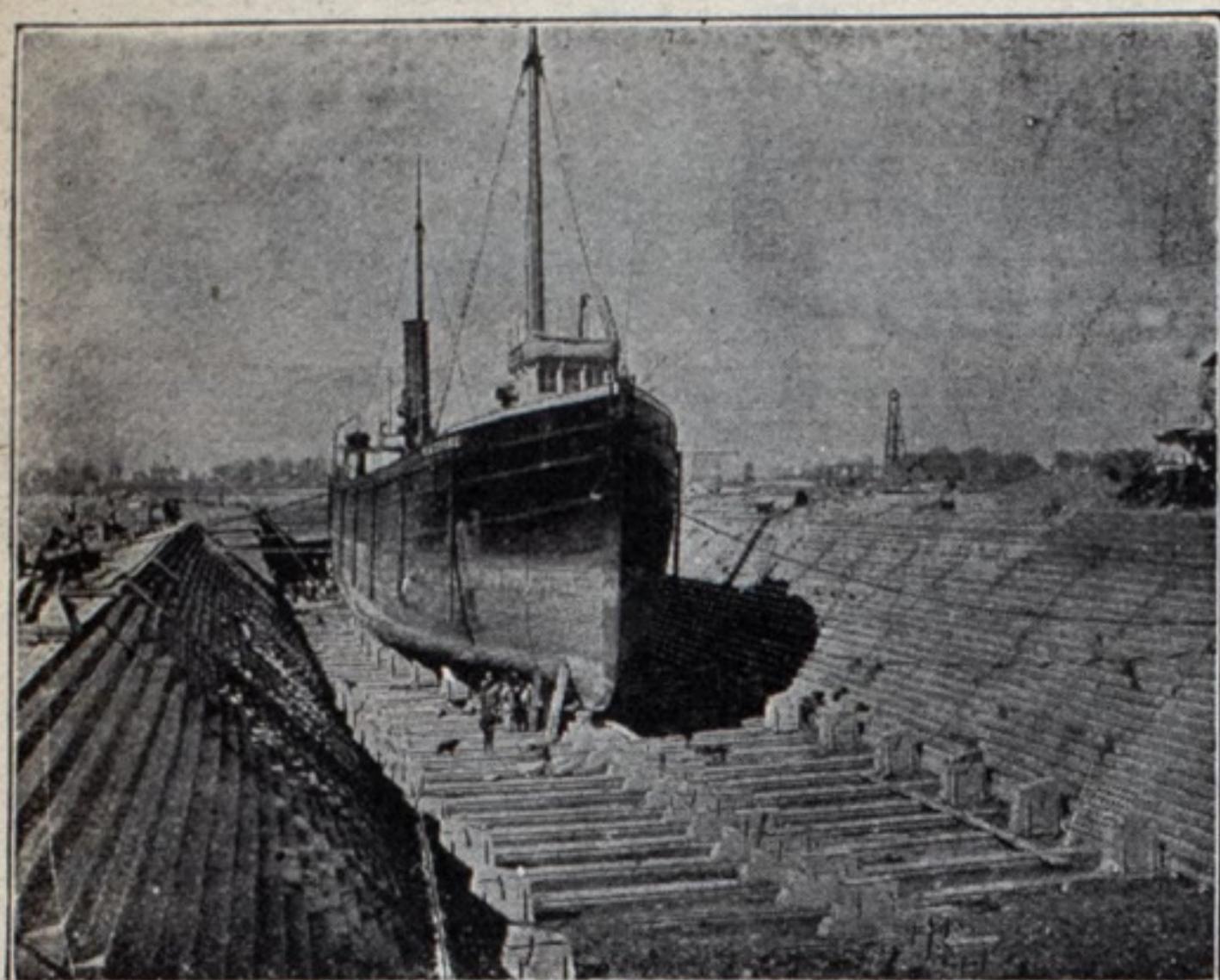
Steamboat Fuel at Cleveland.

THE PITTSBURGH &
CHICAGO GAS CO. CO.

J. A. DONALDSON, Manager. N. J. BOYLAN, Fuel Manager.
OFFICE: 420-421 PERRY-PAYNE BUILDING.
TELEPHONE, MAIN 1888.

No. 1, River Bed, through Valley R. R. Bridge. } Telephone,
No. 2, Main River, Foot of West River Street. } West 190.

FUEL DOCKS: 300 Tons Capacity; Fuel Anywhere in the Harbor.
FUEL LIGHTER:



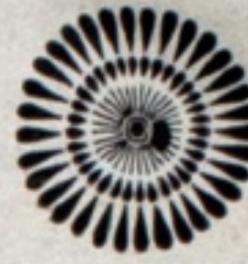
Craig Ship Building Co.

TOLEDO, OHIO.

New Dry-Dock 450 feet long, 110 feet wide on top, 55 feet wide on bottom, 16 feet water on sill.

Repairs to Metal and Wooden Ships a Specialty.

Metal
and Wooden
Ship Builders.



Simpson Dry-Dock Co.

General Contractors and Consulting Engineers,

BUILDERS OF

Simpson's Patent Dry-Dock,

35 BROADWAY, NEW YORK.

A. Gilmore's Sons,

Dry-Docking,
Ship Building and
Repairing.

EAST SIDE, NEAR IRONVILLE,

TOLEDO, O.

Dimensions of Dock, 236 feet long, 55 feet wide at top and 37 feet wide at gate. Nine feet water over sill. RATES OF DOCKING, Ten Cents per registered gross ton for vessels over 200 tons. Jig Mill and Planer in connection with Dock.

PHONE NO. 157.

STANDARD TECHNICAL BOOKS AND PERIODICALS.

Marine Engines and Dredging Machinery (Maw) Illustrated by over 150 Steel Plates and 295 Wood Engravings, Showing the Engines of leading Screw Steamships of England and other Nations.	\$18 00
American Marine (W. W. Bates)	4 00
Practical Seamanship (Todd & Whall)	7 50
Treatise on Screw Propeller, Screw Vessels and Screw Engines, with Marine Record, Steam Engine Catechism (Grimshaw)	5 00
Drawing and Rough Sketching for Marine Engineers (Donaldson)	2 50
Manual of the Steam Engine (Thurston) Part I,	7 50
Manual of the Steam Engine (Thurston) Part II,	8 50
Dominion Admiralty Court Practice (Howell)	6 25

Copies of any of the above Books or Periodicals, or any others relating to Steam Power or Shipbuilding, in any of their details, furnished at proportionately low rates by addressing

THE MARINE RECORD, Third Floor, Western Reserve Bldg.
CLEVELAND, O.

Paint Your
Vessel with

Superior Graphite Paint

NO BLISTERING, CRACKING OR SCALING.

Made especially for Stacks, Decks, Sides, Hulls, and Water Compartments. Strictly Anti-Rust, and most durable and economical.

DETROIT GRAPHITE MFG. CO., 542 River St., Detroit, Mich.

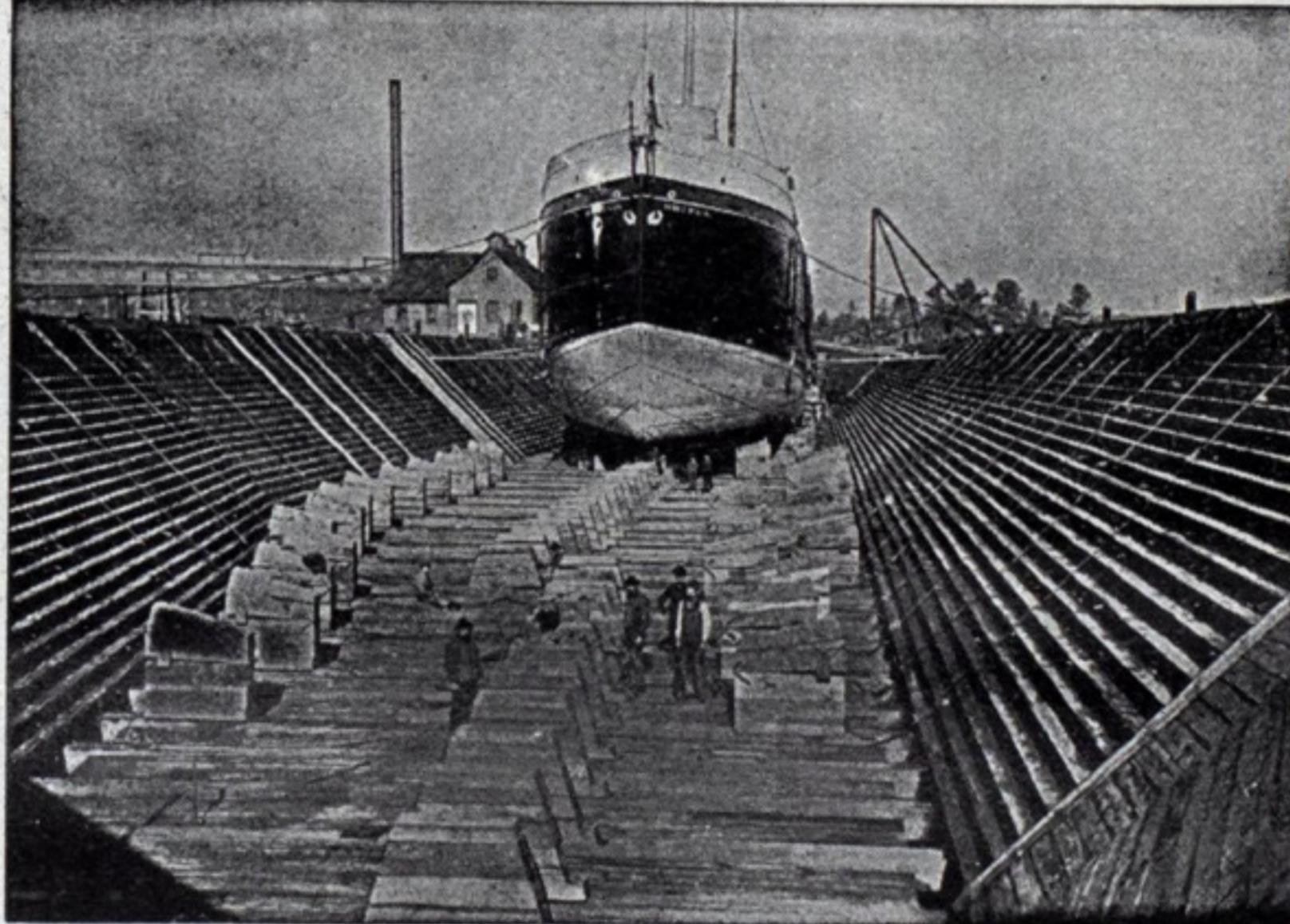
American Steel Barge Co.

STEEL AND METAL SHIPS

Of all Classes built on shortest possible notice at our yards at WEST SUPERIOR, WIS., and also at EVERETT, WASH.

PHOTOGRAPH OF 300-FOOT BOAT IN DOCK.

Plates and
Material
always on
hand to
repair all
kinds of
Metal
Ships in
Shortest
Time.



Best
Quality of
Oak in
Stock
for
Repairing
Wooden
Vessels
of all
Classes.

SIZE OF DOCK

Length, Extreme.....	587 feet.	Entrance, Top.....	55 feet 9 in.
Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 " 18 "	Depth over Sills.....	18 "

LARGEST DRY-DOCK ON THE LAKES.

Prices for Repairs and Docking
same as at Lower Lake Ports.

SUPERIOR, WIS.

A Number of Propeller Wheels in Stock at Dry-Dock.

IRA B. BASSETT

GEORGE PRESLEY, JR.

A. R. TRAIN.

BASSETT, PRESLEY & TRAIN, IRON AND STEEL WAREHOUSE.

Ship Plates; Ship Spikes, Angles, Beams; Channel and Tee Iron; Boiler Tubes; Boiler, Tank and Cooper Rivets; Steel Boiler Plates; Bar, Bridge and Car Iron; Hoops, Bands and Sheet Iron.

BURDEN IRON COMPANY BOILER RIVETS.

THE STANDARD AND ONLY RIVET USED BY ALL FIRST-CLASS BOILER MAKERS IN THE UNITED STATES.

Acme Shafting—We own and control the sale of this celebrated brand and carry a full stock of all sizes and lengths. Boiler, Bridge and Tank Plates, Nails, Boat and Railroad Spikes, Smoke Stack Rivets, Boiler Patch Bolts, Open Hearth Steel.

ARCHEES AND STRAPS FOR VESSELS A SPECIALTY.

GENERAL OFFICES:
23 Merwin Street.

Telephones { Main 417.
Main 423.

CLEVELAND, - OHIO.

WAREHOUSE:
17 to 31 Merwin Street.

Patrons, Friends and Subscribers will confer a favor by mentioning the MARINE RECORD where they are led to make purchases through our advertising columns.

ADMIRALTY LAWYERS.
HARVEY D. GOULDER,
 Attorney at Law and
 Proctor in Admiralty,
 CLEVELAND, OHIO.

ORESTES C. PINNEY,
 Lawyer and
 Proctor in Admiralty,
 722 and 723 Perry-Payne Building,
 CLEVELAND, O.

D. W. HEFFRON,
 Marine Lawyer,
 Suite 601 Unity Bldg., 79 Dearborn St.,
 Telephone Main 3684. CHICAGO, ILL.

HARVEY L. BROWN,
 Counsellor at Law and
 Proctor in Admiralty,
 35 White Bldg., BUFFALO, N. Y.

Geo. S. Potter. Wm. Burnet Wright, Jr.

POTTER & WRIGHT,
 Attorneys and Counsellors-at-Law and
 Proctors in Admiralty.

41-43 Marine Bank Bldg., Main & Seneca Sts.,
 Tel. S. 57. BUFFALO, N. Y.

JOSIAH COOK,
 Attorney and Counsellor at Law,
 Proctor and Advocate in Admiralty.
 OFFICE: Nos. 1, 2, 5 AND 6

SPAULDING'S EXCHANGE, BUFFALO, N. Y.
 Special attention given to U. S. Court and Admiralty
 Business in all its branches, and the Collection
 of Seamen's Wages.

H. H. BACON,
 Attorney and Counsellor at Law
 and Proctor in Admiralty,
 NOTARY PUBLIC WITH SEAL.
 Rooms 25 and 26 City Bank Building,
 319 Main St. BUFFALO, N. Y.

George Clinton. Martin Clark.
CLINTON & CLARK,
 ATTORNEYS
 COUNSELLORS and
 PROCTORS IN ADMIRALTY.
 1012-1018 Guaranty Building.
 Cor. Church and Pearl Street. Buffalo, N. Y.

John W. Ingram. Frederick G. Mitchell
 'Phone "Seneca 990."
INGRAM & MITCHELL,
 Proctors in Admiralty,
 110 Pearl Street,
 15 and 16 Dun Building, Buffalo, N. Y.

Swain Wrecking Co.

Tug Favorite at Cheboygan, Mich.
 Tugs Saginaw and Wales at Detroit, Mich.
 TELEGRAPH Parker & Millen, Detroit, Mich.
 Capt. P. L. Millen, Cheboygan, Mich.

PICKANDS, MATHER & CO.

PIG IRON. IRON ORE AND COAL.

FUEL LIGHTERS

AT BUFFALO, ERIE, ASHTABULA, AND CLEVELAND. At DETOUR, MICH., A FUEL DOCK equipped with Shute capacity of 600 Tons. Best Quality PITTSBURGH COAL furnished at any time during Day or Night.

WESTERN RESERVE BUILDING, CLEVELAND, O.

PROPOSALS.

U. S. ENGINEER OFFICE, Custom House, New Orleans, La., February 6, 1899. Sealed proposals for building dredge boat for improving harbor at Sabine Pass, Tex., will be received here until 12 o'clock, noon, April 6, 1899, and then publicly opened. Information furnished on application. JAMES B. QUINN, Major, Engrs. 6-7

...For Sale

STEAM BARGE AND CONSORT.

Steam Barge classes A1*, capacity 600 M. feet of lumber, 33,000 bushels of wheat or corn, 900 tons of ore, light draft, good condition. Consort classes A2, capacity on 12 feet of water, 850 tons of ore, 32,000 bushels of grain, 700 M. dry lumber. Good trade will be offered. Address

J. A. CALBICK & CO.,
 12 Sherman St., CHICAGO.

FOR SALE.

Schooner Halsted; lumber capacity, 725 M.; net tonnage, 472; length over all, 171 feet; 33 feet beam; 12 ft. 4 in. depth of hold. Barge Middlesex; lumber capacity, 800 M.; net tonnage, 587; length over all, 186 feet; 32 feet beam; 12 ft. 4 in. depth of hold. Vessels in first-class condition. Terms reasonable. For particulars inquire Shores Lumber Co., Ashland, Wis. 7-13

WANTED.

A propeller, arranged for carrying package freight, of about 1,200 to 1,400 tons capacity, with good boiler and machinery. Must not rate below A 1½. Will only deal direct with owners. Give full description and state lowest cash price. Address, P. O. box 951, Chicago.

FOR SALE - CHEAP.

Passenger and freight steamer State of Michigan, in good condition. Stateroom accommodation for about one hundred people; very large freight carrier. Address People's Steamship Line, Detroit, Mich. 7-10

LIFE BOATS.

YAWLS.

LIFE RAFTS.

DETROIT BOAT WORKS

DETROIT, MICH.

STEEL, IRON AND WOODEN TUGS.

STEAM AND SAIL YACHTS.

ALL KINDS OF PLEASURE BOATS, FISHING AND HUNTING BOATS,
 SHELLS, BARGES, GIGS AND CANOES.

VESSELS ON SALE.

FOR SALE.

Steam barge, net tonnage 243, lumber capacity 450,000, good tow boat and in good condition, cheap for cash. W. F. Horn, 1107 Chamber of Commerce Bldg., Chicago, Ill. 1-6

FOR SALE.

Cheap for cash, four wooden tugs, in first-class repair, cylinders varying in size from 18 x 20 to 20 x 22. Correspondence solicited. Address Dunham Towing and Wrecking Co., 210 South Water St., Chicago, Ill. 2-10

FOR SALE.

Tug Frank Canfield, 70 feet long, 16 feet beam, engine 18½ x 20, boiler 11 ft. by 6 ft. 4 inches, 100 pounds steam, first-class condition. Tug C. J. Gnewuch, 60 feet long, 11 feet beam, engine 14 x 16, boiler, 10 ft. by 5 ft., 100 pounds steam. For particulars and price address Canfield Tug Line, Manistee, Mich. 4

FOR SALE.

For sale, cheap, a shipyard doing a nice business. Especially suitable for a mechanic who can lay out work. Address, S., care of MARINE RECORD. 6-9

BOILERS, ENGINES, ETC.

FOR SALE.

Two Fire-Box Boilers 8½ x 16 ft., in good condition, allowed 109 lbs. steam. For further particulars, address E. G. Crosby & Co., Muskegon, Mich. 5-9

WANTED.

WANTED.

Small steam barge, that will carry 60 or 75 cords of wood or lumber. Must be cheap for cash. Address, P. O. Box 171, Two Rivers, Wis. 6-9

WANTED.

Small Steam Barge, to carry about 350 to 400 tons on about 8 feet draught. The Canadian Forwarding Co., Garden Island, Ontario.

WANTED.

By a competent master, small sailing interest in good steamer. Am so situated that can command some freight. Address, Box 247, Duluth, Minn. 4-7

WANTED.

Present address of Daniel Gillispie and James A. Higgins, wheelmen, and James Jeffery, mate, wh. were sailing on steamers on Lake Erie during July, 1896. Will reward. Address H., care of MARINE RECORD. 1-4

STEAMERS WANTED.

Any parties having one or two Steamers, with full cabins, and a speed of about fifteen miles per hour, desiring to place same on a freight and passenger route where they can do a good paying business for at least six months in each year, are invited to correspond with Box 36, MARINE RECORD Office, Cleveland, Ohio. 4-5

WANTED.

A small Steam Barge or Vessel about 125 feet long, 26 or 28 feet beam, draft when loaded 7½ to 8 feet, and to carry from 150 to 200 M. feet lumber. Must be in good class and condition, and cheap. Give full particulars as to size of engines and boiler, and to amount of steam allowed. Address all communications to Lock Box 428, Dresden, Ont. 52-3

When You Go

FROM CLEVELAND TO PITTSBURG, remember that the Erie R. R. offers the advantages of short distance, double track and superior service, and makes the run in three and one half hours without the slightest jar or inconvenience.



THE Bliss COMPASS

LIQUID (Spirit) COMPASS

Made in seven sizes by JOHN BLISS & CO., 128 Front Street, New York, is finely finished sensitive, accurate and durable. Moves quickly and is extremely steady. Is the best Liquid Compass ever made in this or any country. For sale by ship chandlers generally.



Ticket Offices:

No. 1 Euclid Avenue,
Central Station, South Water
Street and Viaduct and
Willson Avenue Station.

*Daily.	†Daily except Sunday.	Depart.	Arrive.
Youngstown & Pittsburg Lim..	*8 05 am	*9 30 pm	
New York & Pittsburg.....	*8 30 am	*12 30 pm	
New York & Pittsburgh.....	*1 00 pm	*7 40 am	
Youngstown & Pittsburg Lim..	*3 00 pm	*10 30 am	
Jamestown & Pittsburg.....	*4 00 pm	*7 00 am	
New York & Pittsburg	*11 15 pm	*6 30 pm	

All trains stop at Willson Avenue Station.

The Cleveland Terminal and Valley R. R. Co.

B. & O. SYSTEM.

Depot foot of South Water Street. City office 241 Superior Street.

	Arrive.	Depart.
Valley J. and Way Stations.....	*6 25 pm	*7 25 am
Wheeling and Chicago.....	*9 25 pm	*7 25 am
Cleveland Press Special.....	*9 25 pm	*1 15 pm
Akron, Canton and Wheeling..	*10 20 am	*3 30 pm
Akron, Canton and Chicago....	*8 05 am	*6 35 pm
Akron, Canton, Marietta,.....	*2 10 pm	*11 00 am
Akron, Canton, Pittsb'gh, Wash- ington, D. C and Baltimore..	*11 30 am	*2 00 pm
	*2 10 pm	*11 00 am

†Daily except Sunday. *Daily.
Pullman Palace Vestibule Sleeping Cars between
Cleveland and Chicago and Baltimore.

J. E. GALBRAITH, TRAFFIC MGR.

TIME IS MONEY,

but it is not necessary to save time when making the trip from Cleveland to Pittsburg, at the expense of comfort. The Erie R. R., combining as it does, short distance and double track, makes the run so easily and so smoothly that not the slightest jar is experienced.

THE FAVORITE AND POPULAR

train between Cleveland and New York, is No. 10, via the Erie R. R., being a solid vestibuled fast train, and consisting of Pullman Drawing Room and State Room Cars, Day Coaches and a combined Cafe and Dining Car. In its appointments, service and detail arrangements, this train is as nearly perfect as possible and nothing is wanting which would add to the comfort and convenience of its patrons. The Dining Car service (meals a la carte), is universally praised and on a par with that of first-class hotels. Try No. 10 the next time you go to New York. Sleeping car space and all information at No. 1 Euclid Avenue, South Water Street, or Willson Avenue, Cleveland, O.

J. H. OWEN, Pres.,
Chicago.

F. H. VAN CLEVE, Sec.,
Escanaba.

Capt. GEO. BARTLEY, Supt.,
Escanaba.

Escanaba Towing and Wrecking Co. ESCANABA, MICH.

Tugs, Lighters, Steam Pumps, Hawsers, Hydraulic Jacks and Diving Appliances always ready

TUG MONARCH—Engine Compound, Cylinder 16 and 80 in. diameter, 80 in. stroke, steam pressure allowed 125 pounds. TUG DELTA—Cylinder 20 by 22, steam pressure allowed 105 pounds.

TUG OWEN—Cylinder 20 by 20, steam pressure allowed, 104 pounds.

CENTRIFUGAL PUMPS.

SEVEN AND FOURTEEN INCH SUCTION.

VESSEL AND INSURANCE AGENTS.

C. A. MACDONALD & CO.,

GENERAL MARINE INSURANCE AGENTS,

Rialto Building.

CHICAGO, ILL.

JOHN GORDON.

J. H. KELLERAN.

H. L. CHAMBERLIN.

JOHN GORDON & CO.

VESSEL, FREIGHT AND INSURANCE AGENTS,

Room 1132 Guaranty Building.

Telephone, 1713 Seneca.

BUFFALO, N. Y.

THOMAS WILSON,

MANAGING OWNER WILSON'S TRANSIT LINE,

General Forwarder, Freight and Vessel Agent,

CLEVELAND, O.

JOHN MITCHELL.

JOHN F. WEDOW.

ALFRED MITCHELL.

MITCHELL & CO.

VESSEL AND INSURANCE AGENTS,

Office, long distance telephones, Main 767 and 798.

Residence, John Mitchell, Doan 341.

"John F. Wedow, 158 L.

"Alfred Mitchell, 197 J.

508-509-510 Perry-Payne Bldg., Cleveland, O.

C. R. JONES & CO.,

VESSEL AGENTS,

FIRE AND MARINE INSURANCE,

Nos. 501, 502 and 503 Perry-Payne Bldg.

CLEVELAND, O.

A. A. PARKER.

JAS. W. MILLIN.

B. W. PARKER.

PARKER & MILLIN,

VESSEL AND INSURANCE AGENTS.

IRON ORE AND COAL CARGOES A SPECIALTY.

15 Atwater St., West. Rooms 3 and 4.

DETROIT, MICH.

CAPT. M. M. DRAKE.

DRAKE & MAYTHAM,

Vessel and Insurance Agents,

NO. 1 MAIN STREET, BUFFALO, N. Y.

G. W. MAYTHAM.

Long Distance Telephone Office, Seneca 81.

Residence, 2615 Bryant,

LATEST U. S. HYDROGRAPHIC
CHARTS ON SALE AT
MARINE RECORD OFFICE,
WESTERN RESERVE BUILDING.

Marine Engines.

SINGLE and COMPOUND.

5 to 200 HORSE POWER. These engines are high-class in workmanship and material and moderate in price.

Send for cuts, description and prices.

Centrifugal Pumps

For raising coal, sand, etc. For dredging, wrecking, and circulating.

Write for catalogues.

MORRIS MACHINE WORKS,

Baldwinsville, N. Y.

HENION & HUBBELL, Agts, 61-69 N. Jefferson St., Chicago, Ill.

U. S. HYDROGRAPHIC OFFICE CHARTS,

Books of Sailing Directions, Etc.,

ARE FOR SALE AT THE
....OFFICE OF....

THE MARINE RECORD,

Western Reserve Bldg., CLEVELAND.

FLINT & PERE MARQUETTE R. R.

THE

"SAGINAW VALLEY ROUTE"

FROM
DETROIT AND TOLEDO.

Has the Best Train Service and Closest Connections for all Northern Michigan, Milwaukee, Wisconsin, and beyond.

A. PATRIARCHE, Traffic Manager,
SAGINAW, MICH.

THE PIONEER LINE

between Cleveland and Pittsburg as to fast time and modern service, is the Erie R. R. The short distance and double track of this line has revolutionized business between these two cities and brought them within easy communication. The Erie R. R. offers a service of six week and four Sunday trains to choose from, and makes the run from Cleveland to Pittsburg in three and one half hours so easily that you do not experience the slightest jar or inconvenience. Parlor car space and all information at No. 1 Euclid Avenue, South Water Street, and Willson Avenue, Cleveland.

MARINE AND INLAND INSURANCE.

Atlantic Mutual Insurance Co.

ORGANIZED 1842.

OFFICE 51 WALL STREET, NEW YORK.

Insures against Marine and Inland Transportation Risks

and issues Policies making Loss Payable in England.

ASSETS OVER \$10,000,000 FOR THE SECURITY OF ITS POLICIES.

The profits of the company revert to the assured, and are divided annually upon the premiums terminated during the year; thereby reducing the cost of insurance. For such dividends, certificates are issued bearing interest until ordered to be redeemed, in accordance with the charter.

A. A. RAVEN, Pres.

F. A. PARSONS, V. P.

CORNELIUS ELDERT, ad V. P.

THEO. P. JOHNSON, 3d V. P.

J. H. CHAPMAN, Sec'y.